

Only 85p

commodore

HORIZONS

February 1986

DM 6.8

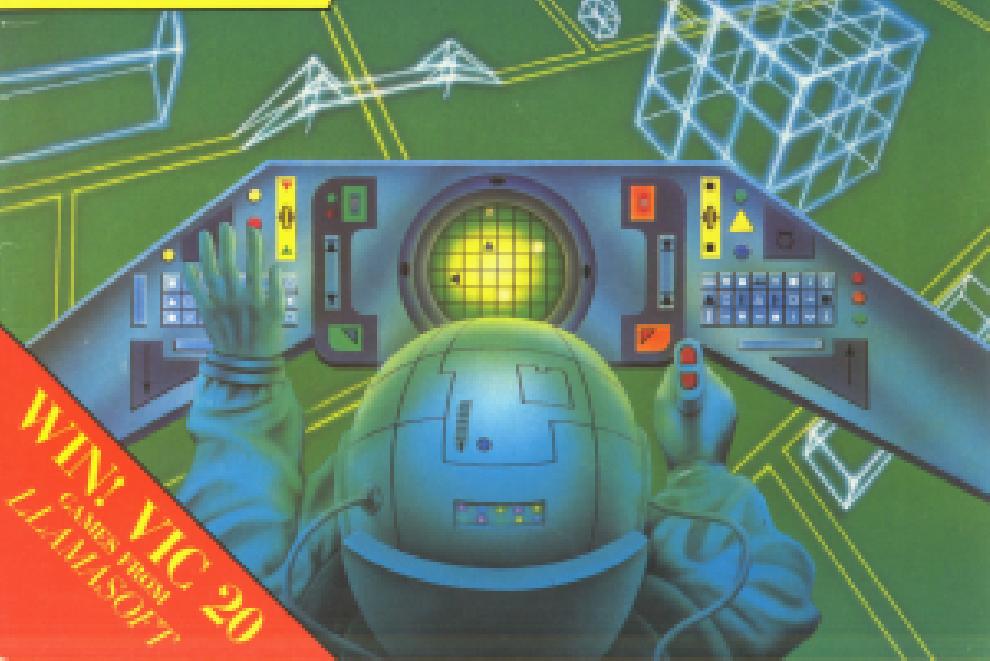
Team up with

MERCENARY

**SEE! M/C ACTION IN
SPACE SNAKES**

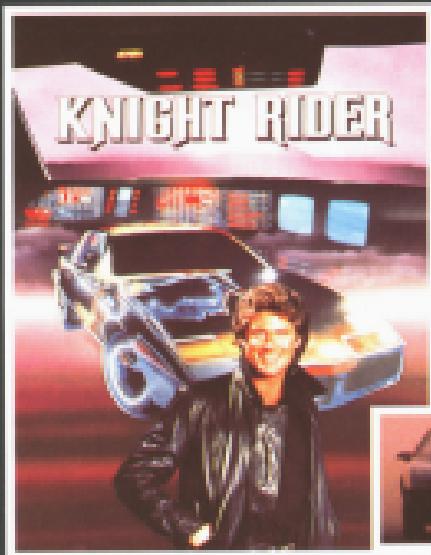
**HEAR! COMMODORE'S
FM VOICE MODULE**

**WIN! ACTIVISION'S
KORONIS RIFT**

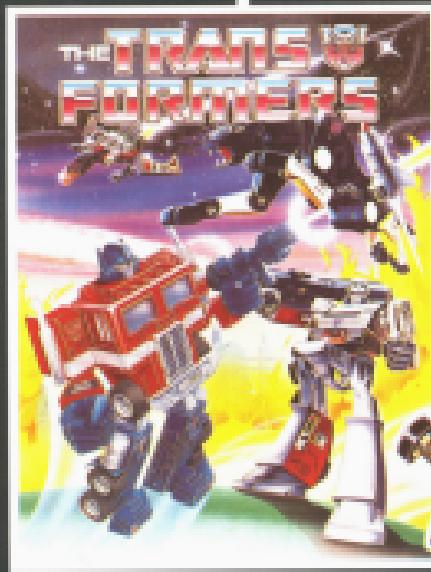


THIS CH

All the **ACT**



Your driving skills will be driven to the limit in this simulation of the hit T.V. series. Just you and a car named "KITT" - the ultimate driving team!



Warrior robots in disguise. Earth has been invaded by powerful robots from the planet Cybertron. Transform into the role of the heroic autobots (Jazz, Hound, Mirage and Optimus Prime) in their deadly battle with the evil decepticons.

TRANSFORMERS - More than meets the eye!

FOR Y
COMMON
AT 0
£8.

Ocean House · 6 Central Street · Manchester · M2 3

Ocean Software is available from selected branches of



WHSMITH

www.ocean.com

PSX from

Team

RAMBO

FIRST BLOOD PART II

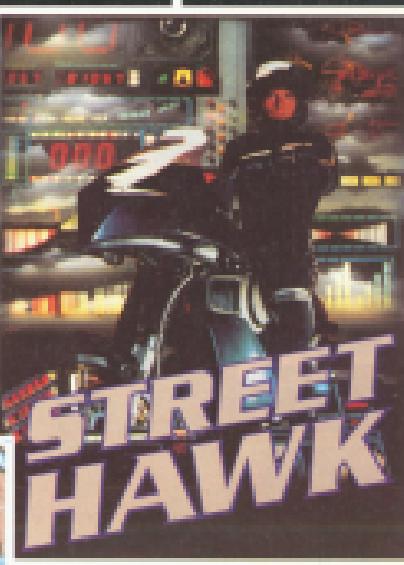


The box-office smash hits your screen with all the high-energy drama that only Rambo can create. Take the role of Sylvester Stallone in the explosive all-action battle scenes.

Become the hunter and the hunted in this breathtaking simulation of the famous film and TV series with Hyperthrust feature, helicopter attacks and daring rescue attempts that only the man and machine combination of Street Hawk can survive.

Don't miss it – burn tread on the streets!

FOR YOUR
NINTENDO 64
ONLY
3.95



Contents

FEBRUARY

GAMES

Soft Hits

Fun for with the cream of the arcade crop

Video Star

Spectacular graphics with Norway's Miners

Tower of Adventure

Kid Mathews dives into more fantasy worlds

Acts of War

A look at military simulations on the 64



CREATIVE

FM Music

Turning your 64 into a professional synth

HARDWARE

Voice Module

Plug-in digital sounds from Music Sales

UTILITIES

Ski Writer

The full of 64-bit word processor from Masteronic

PROGRAMMING

Programming the C128

A fast machine-code game you can enter in Basic

Space Snakes

A fast machine-code game you can enter in Basic

Software File

More programs from readers

20

REGULARS

Mail Merge

Your chance to sit off steam and laugh with Paul

News

The latest from the computer marketplace

Tower of Adventure

Upsets, downers, and hang-ups-arounders

Miner Mania

Jeff reports from the mid-Atlantic

Networks

Which suits your needs —

CompuNet or Microsoft?

Profile

Meet mind Rob

Hofford explains his tricks

AmigaSoft Contest

Win 20 entries — your chance to win Miner games!

Answer Back

Jack Cohen's latest batch of technical tips

WIN! Koronis Rifts

The latest Activision/Commodore game for the 64



Editorial

THE HOME computer market is changing — some would say "maturing" — and the easiest way to assess the changes is to look at the products in the shops. Underpowered machines like the MSX, Electron, and even the C16, are being "dumped" — sold at low prices to clear out stocks. While some of these represent worthwhile purchases, others, considering the lack of software and service support, will not be worth buying.

What we must now look forward to is the age of bigger memory sizes, 128K and 256K minimum, faster processors, and more powerful machines. Any industry which does not move on, stagnates.

That's why from next month you'll see changes in *Commodore Horizons*. No, we're not being forced to merge with the opposition, and no, we're not cutting down on our coverage of the 64, 128, C16, Plus/4 or Vic. What we're doing to the magazine is a section devoted to what should be the machine of the late eighties and nineties: the Commodore Amiga.

In next month's issue you'll get a free 16-page supplement which will give you a taste of what's to come. Get yourself ready for *Commodore Horizons* and *Amiga UK*.

EDITOR Christopher Austin **PRODUCTION** Barbara Hawk **EDITORIAL SECRETARY** Geraldine Smith **ADVERTISING MANAGER** Simon Langton **MANAGING EDITOR** Barbara Goss **PUBLISHING DIRECTOR** Duncan Scott **TELEPHONE** (0118) 887 4807 **TELEFAX** 268271 **SUBSCRIPTIONS** UK: ADDRESS LINE: Commodore Horizons, 12/13 Little Newport Street, London WC2H 9PP. US: ADDRESS LINE: Commodore Horizons, 200 Business Park 1st/2nd Street, New York, NY 10037. **SUBSCRIPTIONS** UK: £19.00 for 12 issues, overseas surface post: £26.00 for 12 issues, US and Canada airmail: US\$35.00 for 12 issues.

Commodore Horizons is published monthly by SSI Press Ltd, Typco, 114 Fulham Road, London SW10 9JL. Printed by Gramercy House, 120, Southend-on-Sea, Essex, distributed by SMI Distribution, 16-18 Trinity Gardens, London SW1V 5EP, telephone 01-731 8601, fax 01-731 8641. **Subscription Books** 1983

Next Month

Amiga UK

A 16-page supplement

Game Killer

Robot's amazing cartridge

Plus

All the usual great features

ABC

SUBMITTING ARTICLES *Commodore Horizons* invites readers' contributions, either program listings or articles. Articles should be typed, double spaced with a wide margin. Where possible programs should be submitted on cassette or disk with a printout on plain white paper. Please keep a copy of your submission — do not send your only copy. Please enclose a s.a.e. if you wish your submission to be returned. All submissions must be your own original work.

Compumart Mega Deals

Best Prices for **BLANK DISKS** in the UK.

Top Quality 5½" Bulk Packed Disks.
(Hub-Ringed and in White Envelopes with a Lifetime Warranty)

**FREE!!! Plastic Library Case worth £2
when you buy 10 Disks**

**FREE!!! Perspex Disk Storage Box worth
£10 when you buy 50 Disks**

10 - 5½" SINGLE SIDED/DOUBLE DENSITY BLANK DISKS (with FREE case)	£9. <small>95</small> + £1 p&p
10 - 5½" DOUBLE SIDED/DOUBLE DENSITY BLANK DISKS (with FREE case)	£13. <small>95</small> + £1 p&p
50 - 5½" SINGLE SIDED/DOUBLE DENSITY BLANK DISKS (with FREE Storage Box)	£49. <small>95</small> + £2 p&p
50 - 5½" DOUBLE SIDED/DOUBLE DENSITY BLANK DISKS (with FREE Storage Box)	£69. <small>95</small> + £2 p&p

GOODS DESPATCHED: Same day 1st Class Post
MONEY BACK GUARANTEE: If you are not completely
satisfied with your purchase we will either exchange
your disks or give a FULL REFUND - that's the
Compumart Guarantee.

Please send cheques/postal orders to:
Compumart, (Dept CM)
71 Gloucester Road, Loughborough
Leics. LE11 0QF Tel (0509) 942259



Compumart
0509-262259
MOTURE AD

Protocol problem

COULD YOU ask your readers if they have played *The Santa Princess*? I have tried and tried with the game, but for some I could get it to the 15th of July, when I am sent to the Falkland Islands. So if anyone could offer any help I would be grateful!

Paul Tropidose
Elgin
Mass.

C16 on the shelf

THESE ARE several points I would like to raise about the Commodore C16.

The very guide mentions the monitor but not real instructions on how to use it. I was wondering if your magazine has given any detailed descriptions on how to use this component.

Are there any software companies planning to release a version of Pascal which will run on this machine when expanded to 64K?

The third point is, is your magazine planning in the near future to give a listing of a basic computer? Do any of the software houses supply one?

Finally, could you supply details of any company which

would supply short courses for the following pieces of Commodore equipment: C16, 128, Datasette, 1541 Disc Drive, 1575/1581 Printer, *John R. Wilkingsby* Company.

BRIAN LLOYD'S book, *The CP/M-80 Computer*, published by ourselves at £3.95 plus 50p p/p, contains a short introduction to using the monitor. A complete explanation of machine code would fill a whole book, and indeed there are many such books available, though none dedicated to the C16.

There's no chance of any company producing (based for a 16K machine) the number of people with 64K expansion memories would be minute, so it wouldn't be commercially viable. Nor have we heard of a BASIC compiler, though that may come.

For short courses and such like, try Commodore's own *Training Services*, at 1 Bletchley's Road, Woburn, North Bedfordshire, Bedford, MK18 5HN, 01234-265555. Review forthcoming.

40-column display of my 64, but since I already own an RGB monitor with 80-column capability, I don't want to spend £100-plus on the new Commodore 1501 RGB monitor just to get the 80-column display in US and CP/M mode. What can I do to get 80-columns without buying the new monitor?

Jack Trew
Manchester

GOOD NEWS — two companies are to manufacture interface cables which will allow you to use the PET monitor, and many other types, in 80-column mode on the 128. Contact Retromat, on 01-299 0918; or Trilogue, on 031-485515. Review forthcoming.

from the 64, has anyone else had any problems? If so, drop us a line — please don't phone, we're busy enough as it is — and we'll try to sort things out.

CP/M a no-go?

WHERE oh where, is the software promised for the Commodore 128?

Most of the software advertised has a 128 label, which does nothing for the 128 CP/M mode.

Regarding the CP/M mode, nobody seems to know exactly what format you need to run software on the 128.

After contacting Commodore, they don't seem to know the answer. Even after purchasing the CP/M Plus Users Guide for £24.95 and Commodore's suggestion to join CP/M Users Group (UK) for which the fee was £7.50, there still seems to be no concrete answer.

CP/M Users Group say that they cannot supply non-standard formats which include Commodore. So I do not know where to go from here.

Trevor A. Mosley
Braintree
Essex

WE'LL BE running a feature on 128 CP/M shortly — meanwhile, can anyone help out?

Artist query

I HAVE just finished typing in Frank Shugley's *Artist 2000* program from December issue, and I have had great difficulty getting my disk to re-operate! Could you check the program to see if there has been any omission or misprint?

K. J. James
Croydon

WE CAN'T spot anything, and as usual we were very careful in preparing the listing. Frank's program came in on cassette and was checked out and read direct



64 trade-in to boost 128

COMMODORE'S latest plan to boost sales of the C128 involves trading in your tired old computer.

Available through all major retailers and independent dealers, the offer enables existing Commodore 64 owners to a 15% discount on the normal £299 price of the C128 when they trade in their old computer. Owners of any other computer will receive a 10% discount, worth £34, when they trade in their machine.

Commodore marketing manager Chris Kirby explained



that the offer was meant to appeal to present owners of 64s and older machines who want

to upgrade to the 128K system, which can run powerful CP/M programs.

of PAL models to be underway by June.

In the States, the peripherals hoped to be available on the date of the UK launch are already on sale: the monitor at \$599, 32K memory expansion at \$200, 154 inch disk drive at \$500, and 134 inch disk drive at \$400. Low-end software packages such as TextCraft, GraphicCraft and MusicCraft are selling at around \$79, and high-end packages like Deluxe Painter at \$129. Plans for US software are progressing, with around 80 Amigas in the hands of developers, but at the moment most are keeping a low profile.

As to what will happen in the trade-in market, a Commodore spokesman would only comment: "There are a number of options open to us, but at the moment I'm not in a position to say what will happen".

The trade-in offer closes on January 31st, indicating that Commodore's main hope is that sales of the C128 in the Christmas period will continue those of rival manufacturers' machines, setting Commodore up for a year in which the C128 and the Amiga will dominate the market.

"Lord" is delayed

AMIGA/INTERTIME HOUSE's *Lord of the Rings*, Part One, will now be available for the Commodore 64 early in the New Year.

Already released on the Sinclair Spectrum, the long-awaited follow-up to *The Hobbit* features recognition of screens up to 128 characters long, full interaction between characters, 800 wood workers, over 200 locations, and a choice of characters to play. One of the programs included is a simple introductory version for players who have not experienced adventure games before, and the complete package contains a copy of the paperback *The Fellowship of the Ring*, a user guide, and two cassettes.

Plus/4 patterns

DISAPPOINTED by the lack of software for the Plus/4, influential designer Ken Edje has written his own graphics program, *Pattern Designer*. In conjunction with an Orlibian keyboard, Ken wrote the program in order to make better use of the Plus/4's powerful graphics capabilities. The menu-driven package includes such facilities as free hand drawing, joining points, polygons, fill, block, shear, screen flip, mirror, move, rotate, screen swap and copy, dual head and save, and full use of the Plus/4's 128 colours.

The program is almost totally joystick controlled, and Ken is making it available at £10. If you're interested, contact him at 28 Cornhill Crescent, North Shields, Tyne and Wear NE29 8LN.



The price of the Commodore 64 version is £13.95, with the accompanying disk at £19.95. Contact: Melbourne House, Castle Ward, Melrose, Berwickshire, TD8 6TF, 01840 6084; for more details.

High Street retailers denied Amigas

COMMODORE'S silicon-based Amiga computer will be sold exclusively through specialist retailers, it was revealed at a recent press conference.

Gill Wellington of Commodore Electronics commented: "We believe that we have the most exciting computer any specialist store can deal in; we are not about to let it fail through selling it where it's prone to a discount machine or a home machine and no discount

believe that high street stores have sufficient experience to demonstrate the machine effectively."

Plans to sell the basic system at around £1000 will be affected by the state of the market and the dollar rate at the time of the launch. At the moment, Commodore anticipate American NTSC versions will be available in Europe in March. "Mr. UK PAL samples available at the same time, and full production



Digital 64 images

THE COMPUTERVISION video digitiser, first seen in the UK at the Commodore Show in June, is now available through Senn Computing. The hardware device connects your computer to any standard video camera or recorder, and produces black and white scanned images on

the computer display.

ComputerVision supports pattern recognition, art and spatial measurement functions, and can produce hi-res screen dumps.

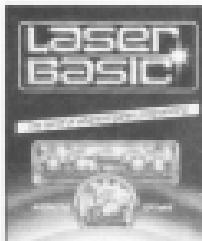
Contact: Senn Computing, 3 Blackstone Ave, Dundee, DD8 4GJ, UK.

Ocean enters utility field with Laser

OCEAN'S first utility program for the 64, *Laser Basic*, is now available. An advanced programming utility designed for games creation, *Laser Basic* costs £14.99 on cassette or £19.99 on disk.

The package allows the user to use 256 extra commands, an extended interpreter, a sprite and graphic designer and two sets of predefined sprites.

Up to 255 sprites can be defined, each up to 255 by 255 characters in size. Additionally, scrolling, enlargement, rotation and inversion of sprites and screen windows is possible. Sound handling, command operations and procedures with local variables and full parameter passing are also possible. Developed by Chris Software, the company behind the *White Lightning* series, *Laser Basic*



will eventually be accompanied by a compiler package which will allow you to produce free-standing machine code from assembly Basic or *Laser Basic* files.

Review and news enquiries should contact Ocean, 8 Central Way, Manchester M2 7WB, 061-832 6153.



Crowned

THE LATEST software release from Argus Press is *The Evil Crown*, Set in feudal England in the year 1280, it places you in the position of an ambitious baron making a bid for the crown. The program is fully text-driven. The highly graphic simulation includes routines in which you hire soldiers, represent the peasants, amass treasure and finally take on the king in a jousting contest. The rewards for success are enormous, and the failure there is only one possible penalty!

For more information on *The Evil Crown*, which costs £9.99, contact Argus Press Software, Liberty House, 222 Regent Street, London W1, 01-5734 6678.

Ariola's Western

ARIOLASOFT'S latest game release for the 64 is neither an adventure game nor an arcade game. *Wild West* is a bit of both: a menu-driven graphic action adventure which features animated sections, as well as more familiar puzzles to solve.

Costing £12.99 on disk, with the £9.99 cassette version to follow, *Wild West* casts you as a cowboy hero trying to save a fort captured by outlaws. On the way you'll encounter bandit, robbers, gamblers, ranchers and outlaws. Alternative actions are selected from a menu using the joystick, and to help or hinder you along your path there are two "spies" who pop up to offer advice. For more details contact Ariolasoft, Suite 101/102, Angleterre House, Palace Street, London SW1, 01-834 6597.

Hot range coming from Firebird

THE LATEST range of games from British Telecom's software house Firebird appears from tomorrow in both full price, at £7.99 per game, but as you'd expect the quality is even higher than that of the popular Super Silver range.

Titles for the 64, available shortly, include *Requiem*, an Ultima-style animated arcade adventure; *Costa Gavras*, a plot from and adaptation of a holiday movie; *Hammerhead*, a

sophisticated graphic adventure; and *Clive the Green*, an arcade game featuring Bob Halford mode. Contact Firebird on 01-739 6751.

Robcom cleans up

THE LATEST aid to Commodore computer system maintenance is from Robcom, the Turku cartridge people. Their Alignment system works with the C16 Plus/6, 64, 128 and Vic 20.

The kit contains two cartridges, a head cleaner and an alignment program, plus a cassette recorder. The routines contain a reference signal which produces a pattern of moving lines on the computer display.

Costing only £1.99 contact Robcom, 36 Market Place, London NW11, 01-299 8118, for details.

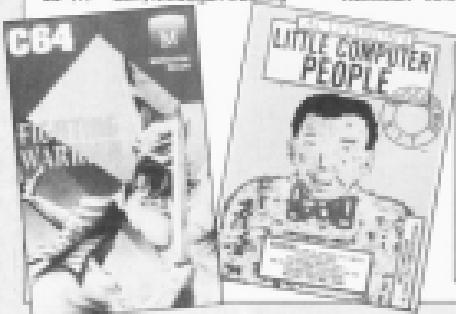
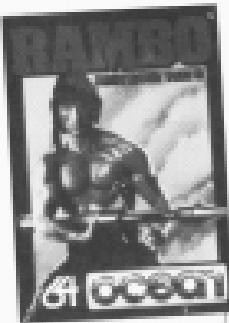


MAKE MONEY WITH YOUR MICRO!
you could earn over £50 per week in your spare time - and
you don't need any special programming skills...

Send for stamp for details to MICRO ENTERPRISE COUN. PW PROMOTIONS, PIONEER, MANCHESTER M6 8EL.

Top Twenty CBM 64 Games

1 (V)D	Winter Games	US Gold	£9.95
2 (V)D	Manly On The Run	Grenadier Graphics	£8.95
3 (S)	Who Dares Wins 2	Allegro	£7.95
4 (S)	Summer Games 2	Hyper/US Gold	£8.95
5 (V)D	Last 'N'	Mastertronic	£1.95
6 (V)D	Fighting Warrior	Melbourne House	£8.95
7 (V)D	Racing Destruction Set	Adolescent	£12.95
8 (V)D	Archie Bunker	Mastertronic	£1.95
9 (H)	Way Oh The Exploding Flat	Melbourne House	£9.95
10 (V)D	Bambo	Ocean	£8.95
11 (V)D	Fight Night	US Gold	£8.95
12 (V)S	Kid Start	Mastertronic	£1.95
13 (S)	Beach Head 2	Access/US Gold	£8.95
14 (V)D	Commando	Elite	£8.95
15 (V)D	Computer Hits (10)	Beau Jolly	£9.95
16 (V)D	Elite	Freelance	£14.95
17 (H)	Sky Fox	Activision	£8.95
18 (V)D	They Sold A Million	Hip Squad	£8.95
19 (20)	Prisoner's Keeper	Mastertronic	£1.95
20 (V)D	Barry McGuigan's Boxing	Activision	£8.95



Bubblers

1	Arcade Hall of Fame	US Gold	£9.95
2	Uncle Computer People	Activision	£9.95
3	Battle Of Britain	PBS	£9.95
4	Inchesep	Ultimate	£9.95
5	Skateboard	Activision	£9.95
6	Robin Of The Woods	Ocean	£8.95
7	Thunderbirds	Freelance	£8.95
8	Super Zaxxon	US Gold	£9.95
9	Curiosity Approach	Microprose/US Gold	£9.95
10	Scaliektic	Leisure Services	£9.95

Top Three CBM 64 'Non-games'

1	MicroOffice	Database	£9.95
2	Music Studio	Activision	£12.95
3	Autolith 2000	Interceptor	£9.95

Top Five C16 Games

1 (C)I	Formula One Simulator	Mastertronic	£11.95
2 (C)I	MTX Racers	Mastertronic	£1.95
3 (C)I	Squares	Mastertronic	£1.95
4 (C)I	Daley Thompson's Star Sprint	Ocean	£8.95
5 (S)	Secretcode	Mastertronic	£1.95

Bubblers

1	Vegan Jackpot	Mastertronic	£1.95
2	Taxis Fright	Mastertronic	£1.95
3	Ali Wolf	Otrs	£8.95

Top Five Vic 20 Games

1 (V)I	Crazy Canyon	Mastertronic	£1.95
2 (V)I	King Tut	Mastertronic	£1.95
3 (V)I	Rockit	Mastertronic	£1.95
4 (V)E	Doodahland	Mastertronic	£1.95
5 (V)E	Rip The Game	Mastertronic	£1.95

Bubblers

1	Psycho Shopper	Mastertronic	£1.95
2	Bullet	Mastertronic	£1.95
3	Neutron Zapper	Mastertronic	£1.95

Data compiled by Otago from a panel of specialist and chain stores, for the month ending November 22nd.

ROCK YOUR MICRO



COMMODORE
64/128K



THE ADVANCED MUSIC SYSTEM

Disc £19.95

"The package looks spectacular and the end results are equally impressive" (Commodore User)

THE MUSIC SYSTEM TAPE

£14.95 Disc £17.95

"Quite simply, the best piece of music software yet" (Commodore Magazine)

MAKE YOUR COMMODORE THE HEART OF A MODERN DIGITAL RECORDING STUDIO
WITH THE MUSIC SYSTEM™ - OR EXPLORE THE WORLD OF MULTI-TRACK
SEQUENCING, MIDI AND LIVE PERFORMANCE WITH THE ADVANCED MUSIC SYSTEM.
THE CHOICE IS YOURS.



ALL THESE FEATURES ARE NOW AT YOUR COMMAND



EDITOR

Compose, edit and rearrange your music with minimum effort, using sophisticated commands and full four-measure zoom.

KEYBOARD

Use your Commodore keyboard to enter and control music with the sequencer recorder-style multi-tracking functions.

SYNTHESIZER

This sound editing module contains custom designed software which enhances the range of the sound engine. Creating and modifying sounds with the sequencer allows you to "record" longer and more in real-time.

PRINTER (ADVANCED VERSION ONLY)

Print out individual music files or complete works with lyrics to add to your portfolio. Compatible with Commodore and Commodore printers.

MIDI (ADVANCED VERSION ONLY)

Create, store or play back original music on your own MIDI keyboard then use the Editor and Synthesizer modules for step-time editing and sound shaping. Compatible with Sequential, Passport and AWE interfaces. Works with most Casio, Korg, Roland and Yamaha MIDI Keyboards.

LINKER (ADVANCED VERSION ONLY)

Creates files from the Editor to be chained together in any order to produce full-length compositions.

OTHER FEATURES INCLUDE:

- Real Time Sequencer (Advanced Only) 1000 capacity
- Multi-Track and Overdub facilities
- 30 Preset sounds
- Sample Music Files
- Save to Tape or Disk
- Professional Manual
- Upgrade offer (Tape to AM3)

For more information contact your local software store or Rainbird Software, 1000 London Road, Bognor Regis, West Sussex, PO22 9AB, England. Tel: 01239 652222. Telex: 832222.



ALL GAMES GUARANTEED IN STOCK

5% DISCOUNT & FREE SECURICOR DELIVERY

ON ORDERS OVER £40.

NOW EASY ORDERING WITH

OUR NEW FREEPOST ADDRESS.



COMMODORE	THCR	COMMODORE	THCR	DISCS	THCR
Winter Games	7.50	Commando	8.70	Rambo	11.20
Elite	11.20	Rambo	8.70	Fight Night	11.20
Monty on the Run	7.50	Fight Night	7.50	L.C.P.	11.20
Fighting Warrior	8.70	Little Computer People	7.50	Goonies	11.20
Scrambles	7.50	Young Ones	5.95	Zorro	11.20
Robin of the Woods	7.50	Zorro	7.50	Mercenary	9.70
Blacksyche	7.50	Skool Daze	8.25	Revs	13.45
Donald Duck	7.50	Outlaws	7.50	Gyroscope	11.20
Summer Games II	7.50	Goonies	7.50	Wild West	11.20
Big Mouth (Speech)	5.95	Yabba Dabba Doo	5.95	Station	11.20
Pitstop II	7.50	Mercenary	7.50	Wizardry	11.20
Impossible Mission	7.50	Blade Runner	8.70	GT Boat Race	11.20
Kennedy Approach	11.20	Revs	7.50	Sky Fox	11.20
Super Zaxxon	7.50	Enigma Force	7.50	Scrambles	11.20
Encounter	7.50	Ball Blazer	7.50	Pitstop II	11.20
William Wobbler	7.50	Arc of Yesod	8.70	Summer Games	11.20
Tenormolinos	6.95	Gyroscope	8.70	Summer Games II	11.20
Worm in Paradise	7.50	Crazy Comets	5.95	Winter Games	11.20
Harvey Smith	6.95	Transformers	8.70	Impossible Mission	11.20
Beach Head II	7.50	Quake One	7.45	Monty on the Run	11.20
Exploding Fist	7.50	Friday 13th	8.70	Fighting Warrior	11.20
Sky Fox	7.50	Neverending Story	7.50	Exploding Fist	11.20
Karateka	7.50	Superman	7.50	Elite	13.45
Mindshadow	7.50	Wild West	7.50	Wizard	11.20
Sabre Wolf	7.50	Station	7.50	Super Zaxxon	11.20
Underworlds	7.50	Hall of Fame	7.50	Peripherals	
Thing on a Spring	5.95	Deathworks	5.95	1. Datex Micro Stick	10.95
Music Construction Set	8.25	Scrolectrix	5.95	2. Quick Shot II	8.25



NAME

ADDRESS

POSTCODE

TELEPHONE

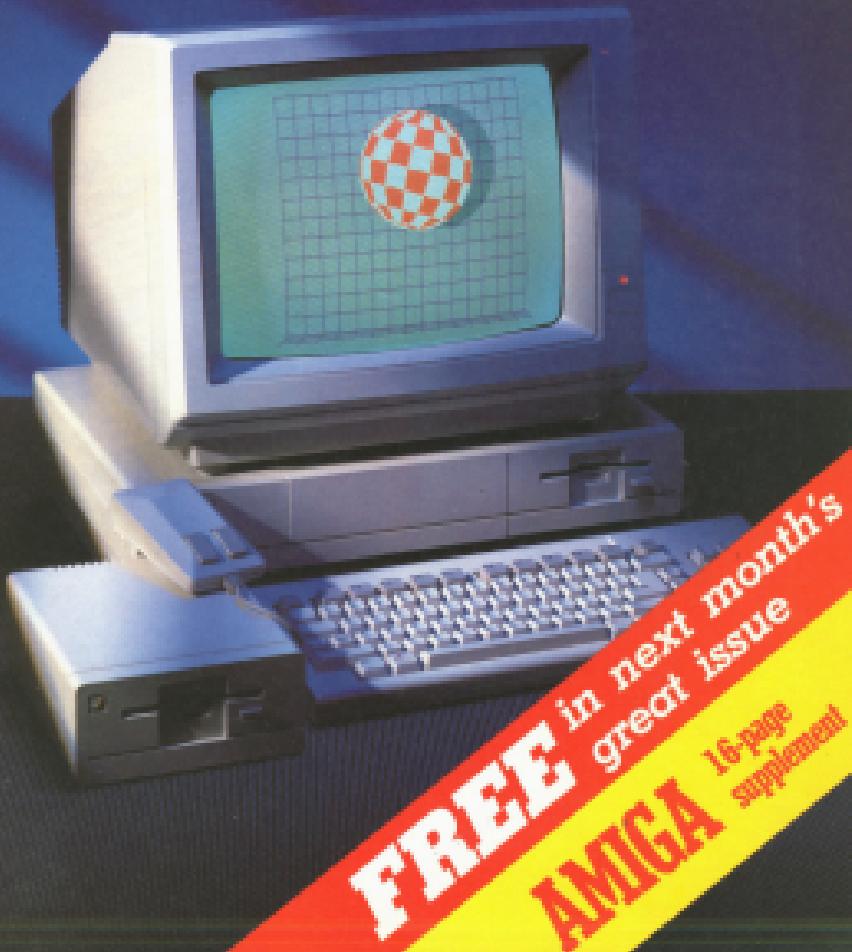
UK ONLY

Send order to:
UNITSOFT,
FREEPOST,
GLASGOW G1 4BRC.

NO STAMP
REQUIRED

COMMODORE -&- AMIGA

HORIZONS
UK



FREE in next month's
great issue

AMIGA 16-page supplement

A NEW CLASSIC
THE
M

CLASSIC
YOU CHOOSE
THE ACTION IN
MERCENARY

MicroQuest - a unique combination of flight simulation, adventure and arcade fun. You choose the action.

There is complete freedom of movement in a truly three-dimensional vector-graphic environment. Graphics of exceptional speed create a very realistic experience.

You'll never play the same game twice. Random elements attempt to seal your fate. Your interaction is crucial.

Memory presents an absorbing challenge that you will accept again and again.



NOVAGEN

INITIAL RELEASE
FOR COMPACTDISK: ALARIC 4000 XL 100 HIT
CASSETTE €9.95 DISK €12.95

DISK 512.93

DEPARTMENT OF ENVIRONMENT, LAND, SEA AND CLIMATE CHANGE, GOVERNMENT OF CANADA

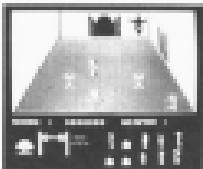
SOFT★HITS

Slasher

Slasher is the acceptable face of Blasphemous violence. This Friday 12th from Domark, much like the insatiable Psycho Killer, the game is based on the dark cycle of movies about mindless mayhem down at dodgy resort Crystal Lake, and the game reflects the film's gory approach with a cover shot of Jason's famous hockey mask, though Domark are keen to point out that the game isn't a "computer masty" (it which

else, what's the point?).

When the game begins you find yourself playing one of 10



characters, drawn from the film. A random choice, it changes every game, as does the

plant palette and the like.

Second on the "platform and ladder" style series, and a slightly more evolved ancestor of home-tap games to try to track down campers, apparently constructed from a variety of corrugated bits — only quick motions and a bit of thought'll save you from needless death.

Further sections feature even more diverse challenges, all set to the accompaniment of another very good Rob Hubbard soundtrack, as our hero climbs up the evolutionary ladder, encountering challenges in

identity of Jason, who is impersonating as one of the other characters. Your task is to locate the Sanctuary Cross which repels Jason, and lead the other characters to it. Should you encounter Jason yourself, you may well yourself at one of the weapons lying about the place to defend yourself.

The action is set in a 7 x 8 screen landscape, containing a forest clearing, a house, a barn, and so on. One nice touch is that each location changes an appropriate time to be played —

hills, factories, and finally a computer age city in its search for napkins. (I must confess it's not a goal I've reached myself yet.)



Graphics throughout are bold and colourful, and the positions diverse enough to keep you on

The Teddy Bear's Picnic, in the wood for example, if Jason kills another character — which happens fairly frequently — a blood-curdling scream is heard, and the characters "toss" on the bottom of the screen turn into a tomb stone. Graphics are fair, but inoffensive (which after all is the point of a game like this in today's lacking).

Program: Friday the 13th, 64

Supplier: Domark

Price: £7.99

Graphics: *****

Sound: *****

Gameplay: *****

your toes. (Though once you've "solved" each screen, it's appeal is somewhat lessened.) Poor creature abroad, the animated face of Jason which appears when you lose your third — and final — life, the background jungle setting on the first screen, for instance, but, two... Tch, Mastertronic has done it again. A bargain-priced picnic.

Program: The Human Race, 64

Supplier: Mastertronic

Price: £7.99

Graphics: *****

Sound: *****

Gameplay: *****

Here is an Allen-B classic, right down to the peculiar Monday, 20th house graphics (check also on Knights!). The one significant difference, however, is that unlike Allen-B or Knights, you have shooting, in the large, rather open-out more noted than human contact manipulation of the seven-blocks in order to reach his objective — a significant part of the gameplay of the aforementioned games and sadly missed.

Nevertheless, it's an entertaining romp.

Program: Chimaera, 64

Supplier: Frontend

Price: £8.99

Graphics: *****

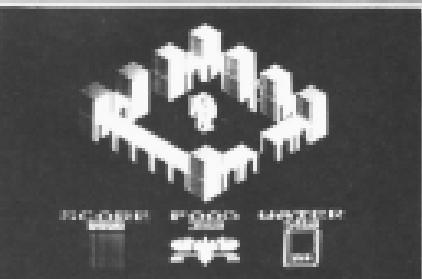
Sound: *****

Gameplay: *****

Bananas

Play the game that took 15 million years to create! (sort of) from the entry. Well, Mastertronic's Human Race should help you pass more than a few idle hours.

What you have to do is evolve; you begin as an ape-like character chattering around a wood jungle setting attempting to collect bananas whilst fending off the unwanted attentions of monkeys, predators,



it has time to drop a big one on Earth. To complete this task you will have to explore the many maze-like rooms of the ship, find a variety of artifacts,

and work out how to use them while simultaneously keeping an eye on your food and water supplies.

The folks — what we have

nowhere, locating the helicopter, returning to the PCMCIA camp to free the other prisoners, and a selection of weapons, including bats, arrows, rocket launcher and machine gun.

The maze-like jungle with another dimension, though you can blast your way through it if you're not afraid to alert the enemy.

The graphics and animation, especially of muscle-bound

Rambo himself, are pretty good, and, although the music isn't by



Bob Hubbard, it might as well be — pitch bonds, soaring lead

lines and all. You can switch it off if you want to concentrate on the explosive sound FX, though.

Rambo certainly lives up to its type, and adds an element of strategy and forward planning to the Commando-type games.

Program: Rambo, 64

Supplier: Ocean

Price: £7.99

Graphics: *****

Sound: *****

Gameplay: *****

Alienated

Chimaera, on Frontend's Super-Silver budget label, marks another collaboration between music whiz Bob Hubbard, and one of his favourite programmers, Shadok Almond. The game impresses immediately, opening with a burst of digitized speech intoning "Chimaera" in notably doom-laden tones, but as play begins, a certain sense of déjà vu descends.

The scenario alone may drag a few bells; your space-suited hero has been sent aboard a mysterious space ship, with orders to locate and initiate its self-destruct mechanisms before

Armada, locating the helicopter, returning to the PCMCIA camp to free the other prisoners, and a selection of weapons, including bats, arrows, rocket launcher and machine gun.

The maze-like jungle with another dimension, though you can blast your way through it if you're not afraid to alert the enemy.

The graphics and animation,

Rambo himself, are pretty good, and, although the music isn't by



Bob Hubbard, it might as well be — pitch bonds, soaring lead

Into gear

Good games for the C16 are few and far between. But *Masterdrive's* Formula 1 Simulator is the exception that proves the rule. Using the by now familiar cockpit point of view, this particular variation on the classic Pole Position features assembly — scrolling, varied backdrops (downhill, cities, coastal, other cars, and

a flexibility device circuit, marked out by parallel rows of 'checkered markers'. Sound



effects are few, but passing another car elicits a nice "EE-ow!", and crashing (which ne-

veries your go) is suitably catastrophic.

The cars are nicely drawn, large, colourful, and rather cartoon-like, with overall motion enhanced by the presence of a steering wheel on the lower half of the screen, which also features hi score, speed, number of laps completed, and so on. The better you hold your car on course the more stable the numerous tight corners, the faster you will go. An additional level of

control is provided in the possession of 60 and 10 gears, which can be toggled using the joystick fire button.

I have seen more racing games on more sophisticated machines, at five times the price. If you have a C16, you must have this game.

Program: Formula 1 Simulator
Supplier: Masterdrive
Price: £13.99

Graphics: **Sound:** **Gameplay:**

time, you must race through the obstacles before you life ends away.

Overscope is very good, although Melbourne House cannot take credit for inventing the game. Music is monotonous, and there's a tedious wait in between runs as you bonus is calculated, but other than that I would have thought this one would make a very pleasant alternative to all the current sports simulations and *Commando*-clones.

Program: *Overscope*, 84
Supplier: Melbourne House
Price: £3.99

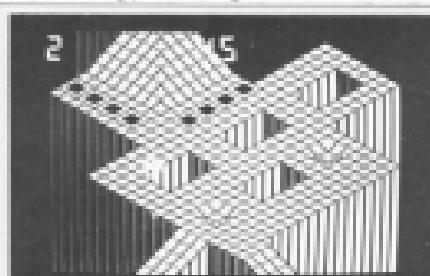
Graphics: **Sound:** **Gameplay:**

short abstract objects, as obstacles.

This preview copy demonstrated all evidence of the intelligent interaction promised. The more appropriate your actions are to your character, the better you are supposed to do, and all the timing and timing test me. A game which will take time to get into, I think. For the moment, I'll give it the benefit of the doubt, and wait for the final version.

Program: *The Young Ones*, 84
Supplier: Copley
Price: £9.99
Graphics: **Sound:** **Gameplay:**

from the cabin of a strange wedge-shaped craft. There isn't



gravity and velocity are very cleverly programmed.

As you bumble around the course, your greenspace is

thickened by areas of sudden inertia, sudden new blades, strange blocks and other measures. Keeping an eye on the

neighbour certain items which belong to you, so that you can move out of the bonus, and win the game. Simple? No. To begin with, you don't know which items are important to you. (Is it the Hobbit? The C16? Richard Allport?) Secondly, the other characters are all busy doing their own thing, lava, Hobbit-style, and may hamper or help your quest, depending on how you interact with them.

Unlike the Hobbit, however, the screen display here is unimpaired, split into two, so show both the room your character is in, and the rooms where 'the most interesting thing' is happening — *Vvvvvv* attacking

in such manner (Talk to Neil about the Lava...). The other characters' responses to you, and indeed to each other, take the form of comic-style 'speech bubbles', which often contain

empty. Catch it in your mouse field, then click for the goal points and race it home before you're tackled by the opposition.

Since the craft is automatically aimed towards the ball, and then towards the goal, there doesn't seem to be much skill involved. Still, you can practice bouncing your opponent around the game grid if you prefer, try these tricks over the horizon shot, or just watch the

empty screens.

Hallblaster, like ITC's *Basketball*, is a clever idea because it takes the current fail for sports games and turns it on its head by inventing a new sport rather than slavishly imitating an existing one. More please!

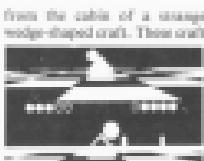
Program: *Hallblaster*, 84

Supplier: Acclaim

Price: £9.99

Graphics: **Sound:**

Gameplay:



up under joystick control over a chess-based like grid, fighting for possession of a ball of

You spin me around

Melbourne's latest arcade effort is based very closely on a highly popular online game, the name of which Melbourne do not like to hear mentioned (but it's *Marble Madness*).

As in the original, your task is to place a weird object (in this case a spinning pentagon) along a course of ramps, pulleys, planes and dips as quickly as possible. The whole landscape is presented with a clever three-d effect, and the effect of inertia,

Oh, shut up, Neil

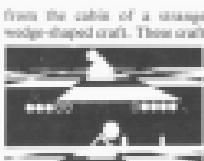
Ophelia's *Young Ones* has a lot to live up to. Almost everyone in the country is familiar with the quartet of education狂热 students participated in *Blue Peter's*貌似 TV show — so can any computer game based on their exploits match its appeal? On the evidence of this pre-production version it's hard to say.

Having chosen which of the four characters you wish to be, your objective is to move around the house, collecting

Future football?

The second of the *Utopia* games from Activision, *Ballblaster* sets new standards for speedy 3-D perspective graphics. Like many American games, though, the initial thrill might pall if you like an intellectual challenge in your games.

The screen is divided into two such half-shots the view



from the cabin of a strange wedge-shaped craft. There isn't

SOFT★HITS

Z is for zap

A top game which boldly isolates its aim in "defend all attacking aliens" can't be all bad, no? wingy liberal justification, no tedious score-keeping, just a heads-down, no-missed-shots "zap-up." When the game — Z, from new software house Riso — also boasts some pretty superb low-relief graphics and

perfect fast scrolling in eight directions, then that's cause for celebration indeed.

Z opens with your ship hovering over an endless expanse of tree-city, and immediately beset by a pleasingly diverse range of alien spiciness, missiles, and mucky mucus.

From the word go, the action is frantic. After every tenth "attack" alien has been destroyed by your lasers (an autocross pistol is a help), an "energy unit" will appear. Destroy it in turn, and an

energy bomb will be released, which you can collect by flying over it before it "detonates" and



vanishes. These bombs may then be fired (by pressing the space bar) at the roving gobs

troops which guard the Transporter Unit. Punch enough holes in the forces, and you can enter the Transporter, and map to the next sector, a beautifully detailed countryside backdrop, with, yes, you've guessed it, more and nastier mucus...

An excellent blast from the author of Hyper�ine.

Program: Z, 3½
Supplier: Riso
Price: £19.95
Graphics: 4+ 4+ 4+ 4+
Sound: 4+ 4+ 4+ 4+
Gameplay: 4+ 4+ 4+ 4+

Heroic Autobots

Transformers, produced by T-Com by the acclaimed team behind *Autobots*, Botcon Designs, drops you in the final stages of the eternal conflict between the heroic Autobots and evil Decepticons for control of the Earth.

First task, as controller of the last few Autobots on Earth, is to guide them through a large

"planet" complex, collecting the 4 parts of the vital Energon Energy Cube, and eventually, reconstituting them at the centre of the complex. To negotiate the slopes, stairs, sudden drops and surprises which make up the



place you will have to exploit not only each Autobot's talen-

ts, but which allows them to walk, and to fly; but their individual alien roles — an aircraft, truck, sports car and so on. Each Autobot has individual levels of strength and fire-power, which may be recharged by shedding them under the various "deformable" vehicles scattered throughout the game — and since only one Autobot can be in use at any one time, playing on each machines' strengths and drawbacks against the others is a major part of gameplay.

Gameplay is fast and furious,

with smooth scrolling in all directions, clear, distinctive graphics, a great theme tune, and a really nice overall feel — though between running my sports car Autobots off sudden drops, and attempting to select a second machine without "detonating" the first, I hasn't really had time yet to do anything about those damn Decepticons.

Program: Transformers, 3½
Supplier: Ocean
Price: £19.95
Graphics: 4+ 4+ 4+ 4+
Sound: 4+ 4+ 4+ 4+
Gameplay: 4+ 4+ 4+ 4+

Yee-Ha!

Outlaw marks a continuation of a trend Ultiman established with their previous release, *Indigo*. Ultiman seem keen to obviously "borrow" all different game types from outside. Your large, well-animated figure begins his mission in the desert (well, desertscrolling backdrops complete with burning sun and cactus), shooting it out with fire-breasted desperados. (desperately) jostic和平ists lasso poor horse, walk, run, gallop and jump over obstacles while you click, and shoot backwards or forwards.) Taking care of them allows you



to cross the border into town, where more villains appear briefly at windows and doors, at

ground level and above, necessitating some quick diagonal-jostic sharp-shooting...

close on in, it's all uphill, with railroads, Indians, rocks, arrows and lured horses when the shooting is over as you progress into ever wilder new territories.

Sound effects are adequate, if not ear-splitting (chocking gunfire, etc), and the action is enveloped with bonus points for conveniently sticky targets.

All in all, it's a satisfying shoot-'em-up, though maybe something of a let-down for Ultiman's old grand fans.

Program: Outlaw, 3½
Supplier: Ultiman
Price: £29.99
Graphics: 4+ 4+ 4+ 4+
Sound: 4+ 4+ 4+ 4+
Gameplay: 4+ 4+ 4+ 4+

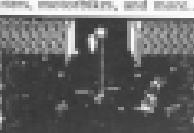
Messy

Fellowes of the recent controversy over various versions of the assault weapon Commando will no doubt be keen to check out the enhanced version, just released by Elite.

Anytime of you will already know, Commando places you in the role of a soldier, only armed with a machine gun and a limited supply of grenades. Fighting his way through overwhelming odds up the screen, and through

4 distinct sectors — jungle, compound, camp and stronghold. At first, you will face only endless waves of identical infantry, attacking from all sides, or springing from the cover of doors, trenches and walls which bar your progress. Your supply of grenades can be replenished by running over areas which are scattered about the place, and extra points can be gained by liberating allied prisoners from their ranks of guards, or by shooting the coloured-uniformed "aliens".

As time goes on, though, the odds get tougher, and you'll have to contend with crop carriers, motorbikes, and more...



The action is fast and furious, but things can get rather rocky at times, and although Commando does play faster than its obvious

rival, Alligator's *Win Three Wins* II, there is an undeniable sense of monotony about the whole thing. There is always so much going on that there can be no sense of achievement, no feeling of progress, in any particular instance you make. Good Rob Hubbard music, a good shoot-'em-up — but not a great one.

Program: Commando, 3½
Supplier: Elite
Price: £19.95
Graphics: 4+ 4+ 4+ 4+
Sound: 4+ 4+ 4+ 4+
Gameplay: 4+ 4+ 4+ 4+

MINTER MANIA

From a British Airways flight between San Francisco and Heathrow, Jeff reports on the COMDEX Show, the condition of Muzak and the Amiga VS. The ST

WELL, here I am back in the UK again. I've just been on the COMDEX show in Las Vegas. Commodore were supposed to have a booth there, and I went with high hopes of seeing plenty of Amigas and lots of good stuff.

No chance! Commodore didn't show up at all, and much gossip regard to the reason, are all the AMIGAs broken or had Commodore simply run out of cash?

Funkytown?

Anyway, Atari made up for that, with some of the coolest stuff I've yet seen on any computer anywhere. Sierra Online had a number of Disney-licensed titles on show, along with an excellent animated 3-D graphic adventure called King Quest III which really blew my brain out. Activision were previewing HACKEY for the ST, already a hit on the 68, the ST version looked really good. A firm called Michelin, unknown in the Commodore field, had an arcade adventure program called TIME BANDIT that looks and plays better than 99% of REAL arcade games!

On Commodore 64's I saw one throughout the show. It seems that people are starting to ignore the terrible Bletchers and everyone's seen an Amiga or an Atari ST-treat, and everyone's doing much better stuff any more.

And something really tragic has happened, too. If you've ever played my stuff like Matrix, Shogun Masters, you'll have natural references to the number 186, which I put in the games in honour of KMEL 186FM, a very good rock radio station in SF. Upon arrival in San Francisco, I retreated to my rented room (it was pouring with rain) in order to listen to KMEL, and sang good heavy rock. It started out OK, I turned on and they were playing ZZ Top, but after the ZZ Top...

After the ZZ Top they played Argentine Latin, and then they willynilly and without provocation put out a song with the word 'Banks' in it. At this point I turned off the radio and put some Gospo in my Walkman to calm me down a little.

It seems that the station changed owners about a year ago, and that the new owners decided to focus good rock in favour of bland middle chartstuff.

WILL, reduced to Muzak. What a tragedy...

Anyway, I don't think we need to worry too much about those being hardy old Chis, at Comdex — it's mostly a business show anyway, and very few games people were there, the only reason that Amiga was over in the Atari stand. Games people wouldn't really bother going to that kind of show. I can see that 8-bit software isn't just going to die off overnight, especially here in the UK, where we can't all afford to run out

and get 16-bits as soon as they appear. In any case, I think that the UK is definitely now producing the best 16-bit games around. We no longer have to rely on US imports to show the '84 at its best... advanced laser-driven stuff like the Donkey Design games, and amazing musical stuff like Bob Hubbard's soundtrack for 'Heavy on the Heart' and 'Cross Country', are technically as good as any of the US stuff, and British software has what most American products lack: imagination. US games tend to be very well-structured and nicely-presented variants on a lot of ideas that we all had 2 years ago, whereas UK people aren't afraid to try out new ideas...



However, one particularly US game we've all enjoyed recently is Winter Games. I must confess I like this one, particularly the dog-sledding and the heli-rotot. This past month I've also been into Return of the Jedi, both new out by Lucasfilm and both using fractal graphics in its 'Return of the Jedi'. In RE you drive a tank-like vehicle over a mountainous planet, searching for and looting the tanks of old spaceship left behind. In a dead civilization, you add weapons to your ship whilst fighting off the Guardian Sensors. The animation, within your ship is particularly nicely animated.

In The Eddie, you have an H.G. With type of time machine and explore labyrinthine underground caverns. Basically you've got the same sort of display as with 'Return', but with the lack of speed for the rotation of the displayed screen. If you liked 'Return' then you'll like the new ones.

Raiders

Any PSYCH fests out there should try to get hold of the latest version of 'Syndicate' demo that's going around currently. This plays the music whilst generating moving vector graphics on the screen and is quite relaxing and hypnotic to watch.

My Amiga's becoming more interesting these days since I get hold of some really nice stuff, including the famous Bouncing Ball demo, some really great 16-bit pictures, and of course the partially-completed version of Blaster Raiders, a combat flight-simulacrum currently being developed by SubLogic. This uses real jet-aircraft sounds sampled directly into the Amiga, and features solid 3-D ground textures and the famous frame-refresh

rate I've ever seen on a home micro. I also have a sound totally awesome through my stereo!

It's interesting to note that the famous Ball demo is in fact 2 or 3 years old already! It seems that it was one of the original demos for the prototype Amiga which was being shown to selected people as long ago as autumn 1983.

Speaking of the Ball demo, Atari was being rather naughty at Comdex; they lined up an Amiga, an Amiga and a Macintosh all running the Ball demo. The Amiga version was noticeably later and smoother than both Amiga and Mac. Atari pandered the demo as if to say 'anything you can do we can do better'. Indeed, graphically the Amiga version was better, but the main point of Amiga's version was not so much the graphics capabilities for the Amiga, the graphics are done by a trivial matter of rendering 2 phyllodes; the hardware makes it easy). The Amiga version is intended to show off the system's extra memory and multitasking. The ball is accompanied by thunderous sounds, in stereo. That is the main area in which Amiga scores over the ST, and the only thing which disappoints me in the ST: Amiga has advanced sound sampling, the ST has a piffing little sound chip which isn't even half as good as our own SID!! Mind you, Atari has MIDI, and if you really want good sound there's nothing to stop you buying a synth and hooking it up to your ST!

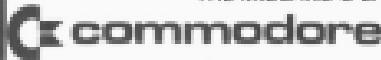
CompuSavers

While in the States, I got a good look at CompuServe, a US network that boasts over 100,000 subscribers, and lots of special areas, for people with particular interests and computers. These are called S.I.G.s (Special Interest Groups); the one I looked at was the Amiga SIG, but groups exist for just about any interest. You can chat to some interesting people online, too; you're likely to rub-electronic shoulders with people like the Amiga designers, and famous programmers are often online and usually willing to chat or give advice. There's tons of free software too. I'd love to see a UK copycat made to CompuServe, 'cos it'd be really useful for Commodore and Amiga users. You can get into CompuServe from the UK, but you'd likely to get phone bills the size of Zzap'd Hebbelton's overhead doing so...

Well that's it for this month. I've got nothing over Christmas with Tony Crowther and a couple of people at the NME, which should be a great laugh (although I'll have to take plenty of aspirin in anticipation of the hangovers I'll be getting)... I will report on this spacing expedition next time! (Hebbelton) ■

DIMENSION computers l.t.d.

THE MIDLAND'S LARGEST HOME COMPUTER STORE



PRINTER OFFERS

COMMODORE MPS 801

DOT MATRIX PRINTER **£129.95***

COMMODORE MPS 803

DOT MATRIX PRINTER **£139.95***

COMMODORE DPS 1101

DAISY WHEEL PRINTER **£229.95***

STAR SG10C

DOT MATRIX PRINTER

with near letter quality mode **£279.95***

*The above prices include:

EASYSOFT WORD PROCESSOR, CASYFILE,
DATABASE, FUTURE FINANCE PLANNING PACKAGE.

COMMODORE DRIVE OFFER

1541 DISC DRIVE - £149.95

Including Super Doctor and Ultima Wigwam drives.
OR

Quattro Pro Wordprocessor Disc and
Practical Spreadsheets Disc.

COMMODORE 128 OFFER

COMMODORE 128 - £349.95

With PRG128 Data Recorder,
Quick Brown Fox Wordprocessor Tape and
Practical Spreadsheets Tape.

COMMODORE 128D

With built-in 1MB Disc Drive £499.95

Any Commodore hardware order over £100.00 includes £5.00 delivery
costs, valid with most major credit companies, until December 1987

PRODUCT ENQUIRY HOTLINE

PLEASE RING FOR DETAILS OF THE WIDE RANGE OF
HARDWARE, SOFTWARE AND PERIPHERAL'S AVAILABLE VIA
(0533) 574790

COMMODORE C32 DATA RECORDER - £44.95* £34.95

Commodore MPS 801 Printer (without software) £299.95

Commodore MPS 803 Printer (without software) £319.95

Commodore 64/128 Colour Monitor £399.95

Commodore 128 £399.95

Commodore 1570 Drive £199.95

Commodore 128 + 1570 Drive £449.95

DPS 1101 Daisy Wheel Printer (without software) £199.95

Pair Quickshot II Joysticks £14.95

Curran Speech 84 £19.95

PERSONAL CALLERS AND EXPORT ENQUIRIES WELCOME

ALL OFFERS STRICTLY SUBJECT TO AVAILABILITY

27/29 High Street
Leicester LE1 4FP
Tel: (0533) 574790

SOFTWARE OFFERS

PRICING	Software	Price
Supersoft 64 Disc	£29.95*	
Supersoft 64 Disc	£29.95*	
Supersoft - Supersoft 64 Disc	£29.95*	
Supersoft Typing Tutor, Disc	£29.95*	
Supersoft Typing Tutor, Tape	£29.95*	
Supersoft 128 Disc	£29.95*	
Supersoft 128 Disc	£29.95*	
Supersoft - Supersoft 128 Disc	£29.95*	

*These offers end 31st January 1988

COMMODORE	Software	Price
Easy File (Database), Disc	£29.95*	
Future Finance (Planning Package)	£29.95*	
Accupay (Budget Spreadsheets)	£29.95*	

AMIGA 500	Software	Price
Microsoft 32 (Wordprocessor), Cartridge	£29.95*	
Micro (Database), Cartridge	£29.95*	

MSX	Software	Price
Easysoft Spreadsheets, Cartridge	£29.95*	
Star, Disc	£29.95*	
Easysoft Advanced Spreadsheets, Disc - Cartridge	£29.95*	

PRACTICALLY	Software	Price
Business Starter Pack		
Inventory (File Control Package), Disc	£29.95*	
Products (Easysoft Spreadsheets), Disc	£24.95*	
Practical (1580 Record/Database), Disc	£44.95	
MS Doctor (Hardware Diagnostics), Disc	£19.95	
MS Pack (Unique Applications Pack), Disc	£14.95	
Total Retail Price	£199.85	
OFFPRICE	£49.95	

Practical II	Software	Price
Advanced Spreadsheets with Database/Spreadsheet Facilities, Disc	£29.95*	£49.95
Logo + Pilot (Educational Languages), Disc	£24.95*	£34.95
Quick Brown Fox (Wordprocessor), Disc	£29.95*	£39.95
Quick Brown Fox (Wordprocessor), Tape	£29.95*	£39.95
Practical (Spreadsheets), Tape	£29.95*	£39.95

Please add £1.00 towards carriage + packing
on any telephone order, or hardware or software
order £10.00, and £1.00 carriage on hardware
orders over £40.00.

To order, either send a fax to 0533/574790 with Access/
Card number, or ring 0533/574790/24049 with Access/
Card number.

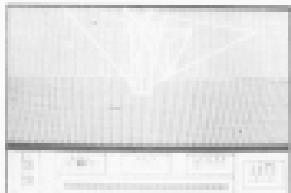
1. Name	2. Address
3. Telephone	4. Postcode
5. QUANTITY	
6. TOTAL	

7. Name

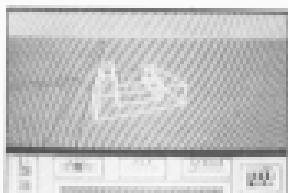
8. Address

9. Telephone

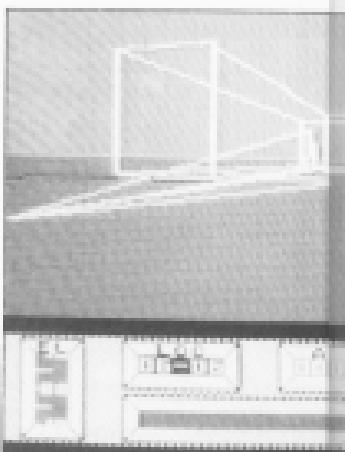
10. PLEASE ALLOW 2 DAYS FOR DELIVERY



▲ Chained on the surface of Targ



▲ Search for the hijacking crew



MERCENARY is a game in which you have, not a single screen of action, not even a fractured screen of action, but a whole world in your computer to explore and conquest. Mercenary is that game, after all the waiting, after being teased by the Amstrad version, it's finally on the Commodore 64, and it's amazing.

Written by Paul Weisbecker, whose *Build-a-zeppelin* derivative *Mercurian* set new standards for fast moving solid graphics animation, *Mercenary* comes from the relatively unknown Novagon Software. It just goes to show that biggest isn't necessarily best;

The planet has one major centre of habitation, which is surrounded by a wasteland. As the game opens, you find yourself because your wrecked spacecraft, caught in the middle of a conflict between the internally peaceful Palays and the hostile Mercenaries. All you want to do is to find a ship and get off-planet — but there should be an opportunity for profit by exploiting the war you find yourself caught up in.

From there, the game develops mainly as you want it to. You can strike out towards the city, using the joystick to control the

MERCENARY

*Amusing animated graphics, complex gameplay and total freedom of movement make *Mercenary* unique. *Wolf Tasker* explores the world of Targ*

Mercenary makes the glooms of some of the huge software houses look tame.

Mercenary uses a three-D vector graphic system to display the space-time representation of the world of Targ. You play your way through a unique combination of flight simulation, real-time game, strategy and arcade adventure, with very little idea of what will happen from minute to minute. The graphics are astonishing and the soundtrack (for the first time, a 64 game gives the impression that a whole new reality has been created inside your computer, and all you have to do is explore it).

The screen display is fairly straightforward. In the lower section is a series of information read-outs from Novagon, your portable computer system. These show your altitude, location, speed, bearing, and messages from Novagon. The main part of the screen is taken up with Novagon's representation of the entire sensory environment which is the planet Targ.

direction and speed of movement. As you get some idea of the vast scale of the game, you will realize that transport is needed if you are to achieve anything!

Novagon will offer you the chance to buy a ship for 3000 Credits. It's almost all the money you have ... but there's no alternative. Buying the ship, a fast, sleek Dominator Dart, you board by pressing the B key, and your adventures begin. As you take off, selecting your speed with number keys and altitude and direction with the joystick, you begin to appreciate the complexity of the game. The landscape moves past you, huge towers, crystalline chips and strange alien structures flashing past. With no set destination, it is up to you to decide your aim. Do you engage in combat, or just sit with the craft whilst it approaches you, hoping to win a contact with the alien life-forms on one side or the other? Or do you bring your

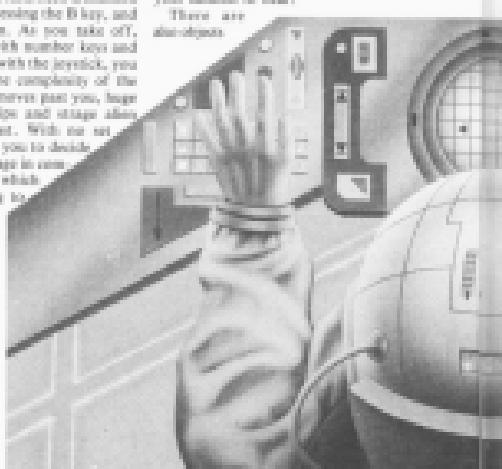
craft to ground, and attempt to enter one of the underground complexes of the Palays?

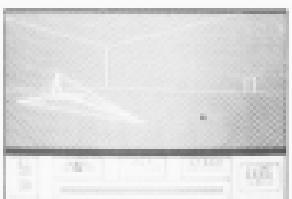
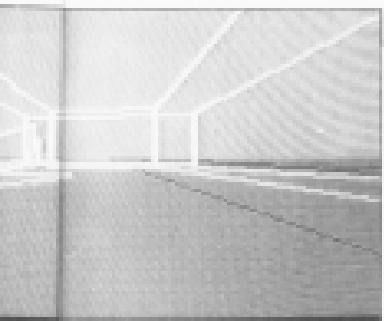
The flight simulation aspects of *Mercenary* are great fun, though it's not difficult to handle any of the ground or air-vehicles. Control is fast too, watching alien ships explode into a million pieces as you bring your caution to bear.

There are also objects



▲ Alien ships fly past your Dart





a. In the underground hangar



b. The Palyan briefing

Upper-decker could have unfortunate consequences; shoot down passing dart ships and you might discover that you have disrupted the new cruise of the Palyan Commander's brother-in-law. Recalibration will be swift; Palyan ships engage you in combat, and despite your attempts to fight them off, you're unlikely to win at this stage. Landing a ship just returns you to the start.

Palyan

Should you reach the briefing room without incident, you have to keep an eye on your speed, altitude and location in order to come in land safely rather than plummeting into the ground. The briefing building is a three-sided structure. Landing your ship and manoeuvring into the opening, you come to rest and press the E key to operate the elevator.

At this stage you progress into a second, equally different, stage of 'Mercenary'. Emerging in an underground hangar, you leave your ship by pressing (L) and proceed to explore the secret complex.

If you can find your way through the maze of tunnels (working your way backwards if you come to a locked door) you may find many objects which will be of use to you. In one room is a strange alien artifact, which, when picked up (by pressing L) and a pressing T), will enhance your weapon system by giving you extra-grenade magazines. In another is a food unit, and in a third a key which will open locked doors.

But the object of this, your initial quest, is the Palyan briefing station. Here the mission commences you to fight for them in the war against the Mekanoids. If you accept the job, you will be required to collect various pieces of equipment, and get them to the warship (serving as a transport over the planet). You will be paid handsomely for each mission complete, and you can also earn bonuses by capturing Mekanoids. If you accept the mission, don't leave without

exploring the rest of the complex — there are objects there which may be useful later. How, for instance, will you reach the mother ship without aid? Your Dominus Dart craft has a limited ceiling, and the warship is only a speck in the sky at full height. So you'll need a little technological aid to reach it, and other objects in the complex will help you.

To help you to travel around the complex there are transporter systems, but you will have to explore their limitations yourself.

Once you reach the warship, after conflict with the warships and the solving of some tuning problems, the rest of the action is up to you!

Mercenary is up for the best game of its kind on any home computer. It has a sense of reality which dwarfs that of any straightforward adventure game; a unique combination of strategy and arcade skills; programming which is impossible to say the least; and the promise that no two games will be exactly the same.

After converting the game for other home computers, Novagen will be getting to work on the sequel, *Mercenary — Escape From Tang* is likely the first in a series of programs which will test Paul Weeks' programming skills. If you win through in the first game, escaping from the planet with a high credit rating, you can set your position on tape or disk. This will give you a high start rating on the second game, which so far only exists in storyboard form.

Warthefence

No doubt you'll need the save facility to get through the game; although it's possible to get through in three hours once you have solved everything and mapped the routes, the game could literally go on for ever. For instance, if you crash in the wastelands you could "walk" the hours to get back to the city, and there are other insurmountable situations where the only solution is to select CONTINUE or quit, and start again.

You choose the action in *Warthefence*, and it was worth the wait! ■

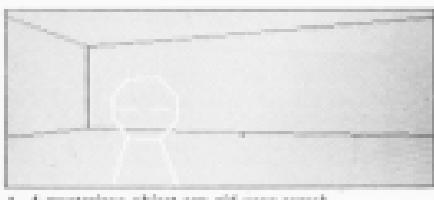
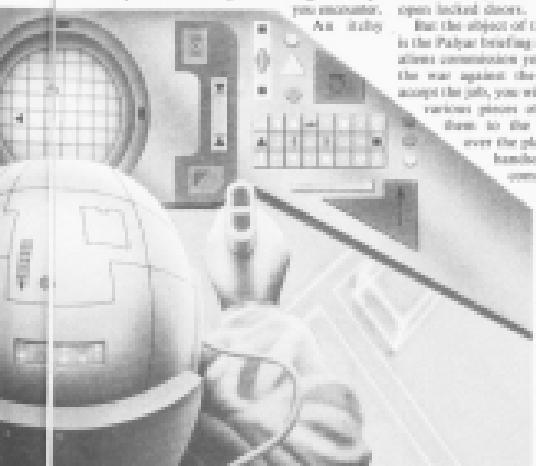
GAME: Mercenary
MICRO: CBM64
SUPPLIER: Novagen
PRICE: £9.95
£14.95 disk

to find, including weapons which can enhance the capabilities of your ship.

If you receive a job offer from the Palyan, you immediately develop a sense of purpose — the offer of money is too good to turn down! Heading for the briefing centre at a given map location, you must avoid the temptation to destroy the buildings and ships

you encounter.

All it may



a. A mysterious object can aid your search

Evesham Micros

THE UTILITY SPECIALISTS

Quickdisc+ Quick, easy, safe, reliable
Quickdisc+ is a unique, programmable, 32 bit disc and read/write system for memory cards. It is a fast, reliable, and safe way to store and transfer data. Quickdisc+ is designed to be used with any computer system, and is compatible with most memory card formats. Quickdisc+ is a great way to store and transfer data, and is a great addition to any computer system.

SELECTED UTILITIES

All prices include P&P and VAT. Send cheque, Postal Order or Credit Card No. Credit Card orders accepted by phone. Callers welcome. Wide range of goods stocked. Trade enquiries welcome. European orders sent at special rates. Outside Europe £1.00 for airmail. Must order on European Stock lines.



1. **DATA BASE MANAGEMENT**
2. **DATA BASE MANAGEMENT**
3. **DATA BASE MANAGEMENT**
4. **DATA BASE MANAGEMENT**
5. **DATA BASE MANAGEMENT**
6. **DATA BASE MANAGEMENT**
7. **DATA BASE MANAGEMENT**
8. **DATA BASE MANAGEMENT**
9. **DATA BASE MANAGEMENT**
10. **DATA BASE MANAGEMENT**

Evesham Micro
Bridge Street, Evesham,
Worcestershire
Tel: 0386 41795

MICRO CENTRE
119A PERTH ROAD,
COTTERIDGE, LEEDS LS17 9LA
Tel: 0113 274 0000



Worms within worlds

Ken Matthews discovers the parts lurking within Level 9's Paradise and Ocean's Land of Fantasy

QUOTE a mixture in the puddles bag for this month, including the long-awaited *Worms in Paradise* from Level 9 to complete the Silicon Dreams trilogy!!!

It has arrived — the first mega-adventure! Over three million locations in the *Worms in Paradise* — if you take the same view as Level 9 did of *Snarlball*.

If you look at the trilogy you can really follow the development of Level 9 into Britain's premier adventure writers. *Snarlball*, a huge text-only game with a staggering amount of text packed into it. *Reinvent the Wheel*, an enormous and immensely enjoyable game, featuring graphics and operational functions still in the same memory space! And now the *Worms in Paradise* with 1,000 word vocabulary, expanded, over 80% text compression, multi-linking so you don't have to wait for pictures to load and, to top it all, a full sentence parser in the Infocom style — making the game the most sophisticated parser-based adventure ever and Level 9's serious contender for the world adventuring title!!!

Snarlball

All the technical stuff aside, *Worms* is a truly fascinating game and it's clear that a huge amount of work has gone into the planning of the everything — as usual.

You are given no real idea what to do beyond a clue on the postcard that something exists in the city of Snarl and you must put things to rights.

There is a wealth of information on the post card which proves my comments on the depth of thought the Austin's have put into devising a city that's not named Snarl without some hidden as yet to be discovered. Building the city out of thought is a must — there are several important pieces of information that will help you out later on as you play the game.

You begin in a stream of Paradise complete with apple and temptation but will soon find yourself in the huge Pleasure Dome where many of Snarl's unemployed pass their time. Moving out and about is simple enough but be sure that you'll need your map-making gear to hand.

As far as the basic transport system, going round Spaghetti Junction in a roundabout 21 would be a lesson compared to setting this one out! And of course you need to sort it out to get anywhere useful — including your own Habidome, sweet Habidome, full with little mites, some thought and a lot of swearing (it's a bloody long time since I did my degree) this is what

goes on — I think:

There are three transport grids, north, east and west. Your position on each grid is fixed by a seven digit code (a 16 bit half) which can be turned into a number using the ubiquitous "reverse code" (check it up). The first column/number tells you which grid you're on and never changes. So once you know which column corresponds to which grid you can finger it. Wish me so far? Good! —

Circles

Now picture a huge chart board with not twenty but one million numbers round the edge and twelve locations from this edge to the centre of the board. You could always walk around the edge until you reach your desired cell but you'll probably die of old age before you get there. Fortunately there is the easy way . . . The bigger the circle is, the longer the outside edge contains reverse grids. So if you walk around the edge of a smaller circle you move through more of the 16 bit digits of the circle. Does that make the right choice? So the easy way to get to higher numbers is to move north towards the centre of the grid and then east or west towards the cell you need. If you go too far you can move east towards the edge again so you cover less ground with each move. A little practice should give you the idea.

Once you've sorted that out, life is much easier but you'll still need your wits about you about you soon points for doing some odd things around Snarl but bear with a social conscience and the right handshake should go far!!

I'll say no more, nor urge you to buy the

game, since every right thinking individual will already own it — *Worm* is a true landmark in adventure gaming.

Last for this month is *Neverending Story* which, except me if I'm wrong, is German's first foray into the adventure scene proper and boasts a graphic text adventure approach.

Like the film, the game is concerned with saving the land of Fantasia from the 'All Consuming Nothing' which is slowly spreading through the land unless someone from the 'Real World' will believe in Fantasia and renew its life.

You play the small boy Andrey, picked by Captain the physician as the only one who can find the saviour of Fantasia.

The game itself is over 100K of code and needs to be played in three parts which are loaded as you reach them. You must complete part one before the game will allow you to move onto part two etc. Beware! You will need some large floppies for a part one in part two etc, so be sure to carry any items you haven't used along just in case.

Commands are entered in the aid of sorta menu style and the vocabulary is VIBES limited. Happily, all of the verbs that can be used seem to be listed on the cassette tape and the objects that can be manipulated stand out clearly in the text.

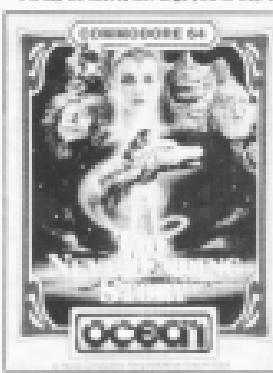
Quicksilver

The graphics in the game are quite simply smoothed and among the best I've seen on the 64. They really do enhance the game and not at the expense of limitations — there's loads to explore and quite a few problems to solve.

Now the rule — if you happen to get killed in part one — and the chances are very numerous — then you must reload part one and replay it and then load part two to go back to where you were! Because of the way loading is programmed from within the game there is no facility to save. Being rather old and irritable this does give me the hump but if you've got more patience maybe you'll see it through to the end!

Neverending Story is a very good game with its fun spoilt for me by the constant reloading — a QUICKSILVER feature saving a position in RAM and Activision use would sort this out or, for the lucky disk owners, a quick loading disk version.

That's it for this month — Wishbringer has only just arrived in my vicinity (big hand and I haven't yet got the review in) so do justice to it I'll feature it next time. I'll also be going through a preview copy of the *Sierra Queen* from St. Bridget's School. ■



OCEAN

The nets tangled

Microsoft Office or Google - which service do you need?

Don't decide before you've made the difficult choices.

THERE ARE numerous modems and software packages available that access the Internet, which is a "worldwide type" database. Modem House, Tandata, Pace and Miracle Technology produce "packs" that include the communication software as well as the modem. Many of these manufacturers include a free quarterly subscription to *Internet* as an added incentive to buy their package.

Companies, however, must be connected with the CESSI modem which runs FSK-PSK. Communication software on board inside the modem includes an editor for preparing mail off-line.

The good news is that a few programs on Computer allows the modem to access other Windows databases. Another few programs enables users to chat to each other and transfer software. Other programs can be purchased on Computer that allow the modem to access scrolling type databases. It's even possible to buy the Microsoft package from Microsoft, that enables CPM modems to access Microsoft's Personal

Registering on Microsoft normally takes ten days, and you'll be sent your 10-digit number, password and local Friend telephone number through the post. There is no initial payment to make, and the quarterly subscription is £6.50 together with other costs incurred in using a bill separator from your phone bill each month.

A year's basic subscription is included free with every CDSI Student package with a registration form and basic manual. The basic subscription is limited and doesn't allow users to purchase software. I would recommend "upgrading" to a standard user rate, which costs a few pounds more each quarter. The basic mandate is in order to provide you with credit to purchase software/tools on the system.

The *Frontier/Micromedia* structure is simple. Numbered pages, as marked frames, consist of 21 lines by 40 characters and include colour and low resolution graphics (32 by 32). Other effects including double height, double and hidden text are also possible.

Moving about Microsoft is achieved by numbered options. For example press 3 for news, or by going directly to a page by entering its number. There are no commands as such, because all menus, buttons and

accessed by going to a specific page and having numbered options.

Computer's structure is based on directories. Each directory is numbered and given a title. Accessing a directory can be done by selecting the **GO TO** command from the diskette menu and entering the directory number. Each directory has other directories leading to and from it, and other commands are used to select the previous or next directory.

the logon page it shall be waiting for you, achieving a **MAIL**, prompt is displayed on the next directory you open.

Chat rooms is a 'gathering place' for those who wish to chat together, with messages being uploaded onto a specific area for all to see. Partyleo is a new development which enables up to eight users to chat together.

The screen is split into two areas, the top shows messages put up by other subscribers while the bottom part of the screen is used to display the message you are writing.

If you run after it, unfortunately it has no wings, they are worthless! If, however, you have to make a choice, then consider what your needs are.

InfoWorld provides a service with a lot of additional content. Besides the brief feature, chat lines and online spaces, there are software/hardware reviews, features, news items, interview columns and so on. In other words it's all there for you. You can be assured that there is always going to be something different to look at on a daily basis.

Computer is quite different. The users tend to be a bit more technical and Computer really is what YOU make of it. This is because there is very little editorial content as good thing in some ways. Users are left to upload their own text and programs in an unstructured. The benefit on the one hand it results in a lot of confusion for the first-time user trying to get the feel of Computer, on the other it provides the reader with some very valuable software.

Whatever service you choose, you'll be introducing yourself to a completely different aspect of computing — here have

David Janda can be contacted on the following numbers: One-to-One (01908) 6711000; 6711011; Companies (01908) 6711022.

For more details of the services, and available remote hardware and software, contact Microset 800, 81-218-3143; Computer, 81-861-8866; Fax, 0274-48221; Tandata, 8841-8821; Modem House, 899-0579; Miracle Tech, 8873-21661.

The CBAI module can be purchased directly from Comshare or Comshare, and the Missing Visualdata software (for the CRM module) can be purchased from Microsoft. ■■■



Binaries within a directory can be downloadable programs, text/graphics, special link programs or other discources.

Fressed's free electronic mail enables Microsoft subscribers to send mail to any other Fressed subscriber by entering their mailbox number together with the message. A subscriber is informed that mail is waiting whenever they logon at logoff. Up to five messages can be stored, and an unanswered inbox option is also available.

True Chatline services allows subscribers to send messages, which can be read by anyone using the Chatline. Uniquechat allows readers to flip forwards and backwards through messages, while the Inner-Uniquechat remembers the previous message when a new message is sent.

Another method of spreading the word is with Gallery. Frames can be listed on a quarterly basis and used to upload text/graphics of whatever you like — as long as it's not obscene!

Company's carrier service enables subscribers to send mail to any other subscriber. A mail medium is possible because an item can be sent to five subscribers at once. A mail box is a single slot.

RELIABILITY. Man has been playing wargames since the first game of chess, and they have developed over the years to form two main types. The miniature wargame which uses models as the playing pieces, and board wargames which are much more economical of space, since smaller scales can be used and thousands of troops represented by one counter a continental squad. Now there are computer wargames too.

Wargames are usually played to strict rules and combat is resolved by reference to charts and tables of figures — just the sort of job handled accurately and quickly by a micro.

One particular software house in the USA, Strategic Simulations (SS) has been producing excellent war and strategy games for Commodore machines for several years but, like much quality US software, with price tags around the £40-50 mark not many people were able to play to play.

It steps out here — US Gold's putting *Combat Leader and Battle for Normandy* on our screens at bargain prices with other SS titles promised for future release.

Canada based PMS Software has joined the wargame scene with its controversial *Theatre Range* and has followed up with *Battle of Midway* and two new games, *Battle of Britain* and *Midland 42*.

Combat Leader is an excellent tactical game based around modern tank and mechanised infantry platoons.

The game is played on a vertically scrolling map which consists of dark green features on a pale green background. Hills, trees and depressions form the terrain. Unfortunately, both friendly and enemy units are also displayed in dark green, making them hard to distinguish from each other or from the trees when in cover. This is the only criticism I have of the game though since the attention to detail (especially SS) and the variety of options given the player are virtually limitless.

The game options range from a novice path for the complete beginner, an intermediate path and a selection of advanced games, each with a different objective. Various units of mechanised infantry, rifle, mortar, machine gun and anti-tank platoons can be deployed for some exciting firefights.



Military simulations on the 64 can turn your micro into a battlefield.
Keri Matthews fights his way through some of the best.

If all of the above isn't enough you can construct your own scenarios then switch with a huge variety of terrain and game elements using vehicles and situations from World War II to the present day.

Combat Leader is an excellent introduction to tactical tank/infantry battles.

The second game put out is *Flameflower's place as Supreme Commander of the League*



accounts in the history of warfare, with the task of putting the field to allow the Allies to sweep east and liberate Europe.

The whole of the Normandy peninsula is represented in the many screens of the game and you have 33 Allied Divisions at your disposal. You have until the end of June to stopify Cherbourg, Caen and the road networks around St. Lô. Total enemy fire and enemy units destroyed will give bonus victory points.

Once again the game is very accurate in the historical sense, and a great deal is made of the very intricate problems of keeping the huge arms supplied and supported.

Allies

Although, as I've said, the authors have taken great pains to include as much historical detail as possible, you are given the option at the beginning of each game to change certain features to make the default (beginner) game playable for a novice or intermediate player. The manual thoughtfully gives some suggestions for these changes which won't ruin the enjoyment of the game by making it too user-ised.

You can play against the computer or a

human opponent but there is no facility for the computer to play the Allied role. The game has a very feature and a handy reference chart gives you an at-a-glance guide of what's going on.

Microprose software have become known, via US Gold, for some pretty popular flight simulators but there are lots of games here for the mass.

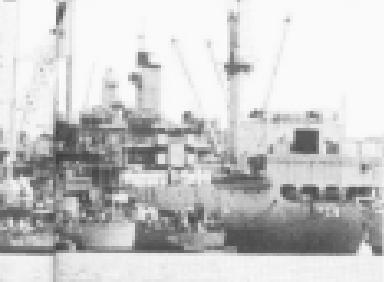
The first of these, *Crusade in Europe* is a real military megagame featuring first battles from the World War II liberation of Europe.

The first simulates the Normandy landings and subsequent battles. The approach to the game though is very different. It is played on an extremely large and colorful scrolling map of the whole of north western Europe from Normandy to the Baltic, although some screens limit the amount of map you can scroll though. The scale is much smaller than the SS game, so it provides a much larger strategic overview of the present situation.

A player can be used with the game to issue orders to individual units — very quick

Wargaming for the Commodore 64

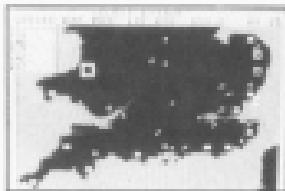
ACHINES



A *barbarian*'s Headquarters, some *WII* campaigns

and useful it is not! Another helpful feature is the ability to swap between the conventional system of showing the make-up of each unit in a small rectangular box and more stylized symbols like a rhombus for infantry or a flag for an HQ. This should help the newcomer a great deal.

Handling the units is quite easy, you just tell them where to go — no matter how far



the computer handles the rest by moving them according to terrain and how the unit is formed at that time. You can change orders at any time through which is handy if enemy reinforcements should arrive at the edge of the map behind your lines etc.

As units meet and fight you get an audible warning and sometimes a visual idea of what's happening. Of course you may be fighting on turns, but in that case you'll get a report from the unit on the message area at the top of the screen.

Supply lines are taken into account although not in as great detail as in the previous game — the computer handles it for you but you must be careful not to take on too much at once or units will run out of supplies even if a line of supply exists — a unit in combat uses much more turns, fuel etc. than are in reserve. You can provide alternate to take up enemy formations or destroy supplies, but there is no facility for total bombardment.

All of the details of each game and the historical background is supplied in the excellent, well-illustrated manual which comes massive (40 pages) but need not be at all read before you play. In fact most people should

be able to play along while reading the manual and pick up the detail by experience.

In this first scenario on fewer than the options are available, such as the Germans marching quickly, or using Rommel's strategy. The other scenarios are Race to the Rhine, Market Garden (Arnhem) and the Battle of the Bulge. Each of these have at least two options. All of the games allow you to play as Allied or German commander or against another human.

Finally, as if there wasn't enough, the last scenario Crusade allows you to play the whole European campaign from Normandy to the Ruhr — to me at least — a mind-boggling sort of programming!

Crusade in Europe is quite simply brilliant — by far the best and most enjoyable war game I've ever seen on a micro — it's a joy to play and the range of difficulty levels allow senior and expert alike to get many months of pleasure at a price so low you'd be insane not to buy it.

Also out will be Decision in the Desert which covers first of the pivotal battles of the Axis Army in North Africa from Fall 42.

Since it is a follow-up to Crusade in Europe the mode of play is identical and the manual is just as thorough with some very nice maps.

The scenarios are well chosen to represent the changing fortunes of the campaign: Sidi Barrani where the British drove the Italians back to the west of Tobruk, Rommel's attempt to push as far east as Libya in Operation Crusader followed by the final blow at Gazala, South is the first battle of Alamein where Rommel tried to push the British back to the Nile. Alamein or Hellfire Pass is the end for Rommel as the Allies pushed an supply lines stretching from Europe across Africa.

There are then, another masterpiece — no campaign game though but still plenty of meat to get your teeth into and the games are quite long so the passes and save features will come in handy.

Two splendid games for us enthusiasts with more to follow including the Vietnam War and a chance for us to win where the Americans failed. I for one will be keeping on US Gold's toes when I hear they've arrived.

Actions

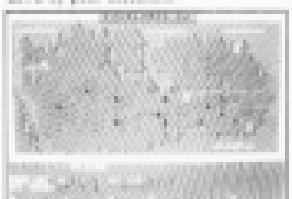
Back to the UK for Battle of Britain, PSS's latest in their Wargame Series.

Like their previous titles DOWB seems to attempt to please both made players and wargamers by combining action sequences and strategic planning — it doesn't quite come off, but if it's any comfort I found the aerial combat sequences better than most "simulators".

You can get rid of the action sequences though, and play on the map of England showing major airfield, cities and some radar stations. Flying formations appear at the edges of the map and you deploy squadrons of fighters in unscripted ways. Your planes must land in a return after each combat, and only carry limited fuel so lengthy patrols are out of the question.

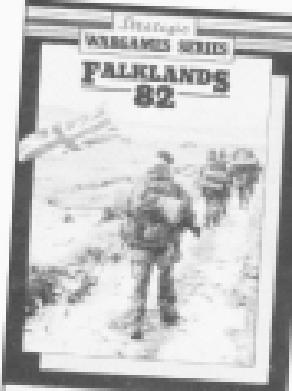
You must defend the cities or your rating will suffer but if your airfields are bombed you must divert your forces or chance suffering the loss of valuable fighters as you land.

There are three levels of play, Training for the novice which covers a day of campaign, Blitzkrieg which is also over a day but at a "hell on wheels" pace. The Campaign game covers a month of battle with a daily re-supply of planes becoming less skilled as time goes on. If PSS intend to cater for wargamers I think they would do well to learn from the excellent material above, and use the memory space wasted on arcade sequences and music to produce more detail in their games which seem to be very good, well thought out ideas let down by poor execution.



I thought there had been some improvement when I received *Falklands 82* from PSS, with Strategic Wargame Series on the cover.

The game takes place on a portion of the Falkland stretching from San Carlos Bay to Stanley. You can attack the ships of the Task Force or supporting guardia or protection of the Task Force. Your British units must take on the twenty defending Argentine units and



liberate the various outposts on the island.

No arcade sequences, and the manual read rather well, but loading the game brought great disappointment — the map is all on one screen, and the units are tiny. You can only move in four directions, whereas wargamers have been using hexagonal movement for years, leading to "locking up" of units as they block each other off. Again a very good idea for a wargame has been let down by poor programming.

No doubt you'll be hearing more from me as new titles appear but if and then I look at the advertisement page — come on! I've driven the Germans back to the Rhine. ■

Digital music making

Commodore's FM sound expander gives you 64 the power of a professional synth

THE SOUND EXPANDER does for the 64 what Yamaha's chip synth module did for their CX5 Music Computer, turning it into a fully-fledged polyphonic synthesizer with very high sound quality. And there's no real substitute for hearing the sound Expander, because it is quite unlike any conventional add-on sound unit.

FM sound generation has revolutionized the world of commercial synthesisers with a new generation of clean, digital sounds, and the Sound Expander gives the 64 eight voices based on FM techniques. In fact Music Sales are laying in their FM chips from Yamaha, who hold a worldwide licence on the technique.

The basic software on disk is rather simple, although there's more to come and these further packages will no doubt make the Sound Expander more useful on a professional level. The initial package is of the "Play-Along" variety, and can be controlled either from the popular Music Maker chip-on-keyboard now available separately for £39.99 or from a full-sized four-octave keyboard of Italian origin costing around £85.

Once you've loaded

DOS, obviously many users will be more than happy just to play the Sound Expander as a normal synthesizer, although there's little control over the sounds except for an overall brightness adjustment.

If you do want to become more ambitious, there are twelve rhythm accompaniments available, each with their own arrangement of bass and repetitive patterns. The drum sounds are very life-like, although again there's little programmability available — perhaps this is to come. The software also has a section originally known as "MIDI

sharp or flat and there's also an option of flashing the border colour as the auto-accompaniment feature plays — a sort of mid-air rainbow light show.

The Sound Expander is impressive as a basic preset musical instrument — even the cheapest decent keyboard instrument costs four times more, assuming you already own a 64 — but its accompaniment facilities (while useful) are more or less for the keyboard beginner.

What's more exciting is the prospect of what Music Sales have lined up for the not-so-distant future. The Sound Expander module has a full-cartridge port and this will accept an input from a forthcoming touch-sensitive keyboard. It's also planned to design a Sound Creation package which will allow you to define your own FM sounds from the ground up. Reading University's MusicTech department is collaborating on software development, initially to make sure that it is suitable for education applications, and a pilot scheme is now running in seven schools.

The students on that scheme are going to come away



the disk and hooking up the phone output to a TV if you can use a special lead to connect to a TV's video input. If preferred you're presented with a main page with various playing options — normal or single finger chord playing, octave transpose (ideal if using the Music Maker keyboards, Ensemble On/Off for richer sounds limited to four-note polyphony, Chord Memory, Programmable SP point, Bends and so on).

If you do choose to create a solo piece there's a separate "Lasso It!" menu giving the same choice of sounds — Bass, Electric Piano, Organ and so on, all having the very high degree of life and realism associated with Yamaha's FM synthesisers such as the

Musical" which includes a couple of complete demo tunes but which also allows you to program your own choices of preset sequences. All you have to do is tap in the sequences from the computer's 1-10 keys (or on the Music Maker keyboard if you're using one) and the software arranges them for you. The riffs are written so that they'll combine well in almost any order — it's a musical Lego set.

Lego has its limitations though, and while the KMF Machine is impressive in operation, it's agreed it's likely to move after a few goes. In February, however, Music Sales hope to be delivering an FM Computer package which will allow you to create your own pieces using up to eight different monophonic sounds simultaneously, rather like the Yamaha CX5 software.

One advantage of the existing Sound Expander software is that it could act as an educational aid. All notes played on the keyboard are shown on a screen display representing a music stave, and presumably this display will be further exploited in the forthcoming compositional software. You can change the display mode to show either



with some very good basic ideas on FM sound, a handily split-keyboard musical instrument, and offer a deep range or an external looking for one-finger chord, bouncy automatic bass-line. It's worth checking out the Sound Expander to see exactly what you could get out of it. ■

Product: FM Sound Expander
Manufacturer: Yamaha, £169.95, 128 in 64 mode
Supplier: Commodore,
 1 Hunter's Road,
 Widnes, North Lancs, WA8 2AS,
 01925 209119.
Price: £99.

A Flash Of Genius!

THE NEW 64 MULTIMODEM



GIVES YOU DATABASES, BULLETIN
BOARDS, ELECTRONIC MAIL,
PRETEL — ALL ON YOUR
COMMODORE 64 OR 128

At last! The perfect modem for your Commodore® 64 or 128, giving you access to Prestel®, Microsoft®, Minedata and a host of other services — plus user-based communications.

It couldn't be simpler. The 64 Multimodem has auto-dial and auto-answer, with all Commodore software on-board in ROM. 64 Multimodem fits your Commodore's cartridge port, and has just one external connection — the telephone lead.

The 64 Multimodem is menu driven and multi-speed, with CCITT v21/23 and Bell 103 1200/2400, VME 1200/2400, VME 3000/6000, 1200/2400 and 75/1500. Functions include send and print fax and auto-mailbox with edit and save.

Buy your 64 Multimodem now and we'll give you free introductory software discs to Microsoft and Microsoft's™ own unbeatable package at an unbeatable price — it's pure genius!

£998.50
(exc)



Approval applied for

Buy now and receive 10% off the computer's purchase price.

From the Communications
Powerhouse



MIRACLE TECHNOLOGY

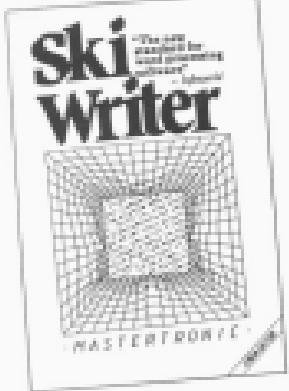
MIRACLE TECHNOLOGY (UK) LTD. ST PETERS STREET IPSWICH IP1 1XB ENGLAND
(0473) 216141 811889 TELECOM (020 7) 841 9511 (WATFORD 72) 070 151355
9462240 CM EAST 0 180022483 PRETEL MAILBOX 919992222

Send to:
Miracle Technology (UK) Ltd.,
9, Peters Street, Ipswich IP1 1XB.
please Rush me
64 Multimodem/s
£ 216.15 (inc VAT & UK delivery)
please enclose my account no.
card no. _____
Name. _____
Address. _____
Postcode. _____
Z 10

More words per pound

Mastertronic looks set to turn the utilities market on its head with a new budget range. Ken Matthews tries the Ski Writer word processor

MASTERTRONIC has been developing a range of high-quality budget price software over the last year. Now they've taken a step into the utilities market, and acquired the rights to Ski Writer, a word processor originally sold in the USA for \$79 and released here for a paltry £14.95 on disk or £11.95 on cassette.



Written by Ken Skinn, who helped develop both the Wang word processor and the Lucas 1020 computer, the Ski Writer has arrived with inclusion in the USA and claims to be user-friendly you don't even need a manual. This also helps Mastertronic to keep the price down.

Using the sound logic of letting idiot proof software be tested by idiots, I was handed a disk and told to produce the words you see before you ...

"High quality", "a gem", "It was amazed at its speed", enthused the American reviewers, and I must say I agree entirely. I sat at home with the program as soon as the main menu appeared, and had fallen for its charms a few hours later.

More important for the new user, help is just a keypress away; the instruction screen gives clear, simple instructions to get you started. If you've used a different word processor before, the new user section will show you the main differences and points you to three sample files to illustrate features of the program. You can never change the background and type colours to find a combination that doesn't strain your eyes.

The program is so easy to use that you can 'set once' and just type away. Each

feature of the program, edit, format, preview, print and file has its own help function to help you pick things up as you go along. Underlining, custom layouts, word search and replace, move text etc. etc. are all there for you to experiment with, as you please. The sample files provide worked examples for easy reference.

Formatting is a breeze, and allows the user to make all sorts of changes within the text itself by use of what the program calls "text lines" which are short commands that begin with a full stop. You can use dot lines to set margins and page length, spacing of type, type and comments which don't appear in the text. These features will produce a very professional looking document.

Preview

To save you time and paper the Preview function lets the user see just how the text will look when printed out.

Getting down to the practical stuff, the Ski Writer supports the full range of Commodore printers and many other popular makes, although you may need to refer to your printer manual to answer some of the questions the Ski Writer asks you when setting up ready for your particular machine.

You can save your words in cassette or disk as you choose, but obviously disks were designed with this in mind to avoid and prevent a lot more trouble in handling files. The software will handle formatting or clearing for you, and even arrange your files into logical word processor files.

alphabetical order. The MERGE facility means you can combine several files into one large document or insert parts into other work.

There's really not much more to be said. If you are taking advantage of Commodore's special printer offers, and you've any type of paperwork to produce, Ski Writer is the ideal word processor for beginner or hack alike — just put it in the drive and away you go! It would be a bargain at double the price.

Ski Writer is the first of a series of utility programs from Mastertronic, who hope to do the same in this field as they have in the games market: make a success of offering inexpensive, quality software with no frills, and selling in vast quantities to make up for the decreased profit margin. Major retailers such as Boots have already expressed interest in the Ski Writer package, and the forthcoming database and spreadsheet programs. It seems that Mastertronic will once again set up the market just when it seems that all the other software developers are giving up on the 64. ■

Program: Ski Writer
Media: C64 64
Supplier: Mastertronic, 8-10 Paul Street, London EC2, 01-473 6220
Price: £14.95 tape,
£11.95 disk

File handling

MSD EXCOM have for some time now been marketing a specialised accounts program from Dialog Software. The Treasury Book-Keeping System includes sales ledger and invoicing, purchase ledger, stock control and bank accounts sections, and comes on disk for the 64 with a separate manual for each section.

Transaction File simulates the manual entry books, and has optional VAT facilities. The accounts file acts as a Nominal Ledger, and can cope with 100 accounts. Full software support is available to registered users.

The complete package costs £75, which Dialog claims is a saving of £79.75 on the cost of each program separately. There is also a cassette version available, and a similar offer to being made for Dialog's Plus-8 range of programs. For more details, contact Dialog Software, 20 New Row, London WC2M 8LA, or phone 0171 811089. ■

Rob Hubbard – the master of micro music

Tony Read travels to Newcastle to talk to the man whose music programming has squeezed sounds out of the 64 which shouldn't be possible with SID!



IT'S NOT original to remark upon a similarity between the world of top game programmers and the world of pop music — both with their charts, their overnight success stories, and their sudden fashions. But the particular case of Rob Hubbard fits the cliché better than most. Uniquely amongst UK programmers, he has made his name, not through writing the next big thing in platform/arcade adventures, but by writing the music accompanying them. And what music it is: on *Centipede* the Geyser's Mouth on the Bass, on *Commando* Don't Eat, on *Married to Death* Come On, the 64's posy little *London* SID chip suddenly brings forth great-sounding 3-D depth, original music, doing things you never thought it could. Hubbard's name as a game these days is a visual guarantee of a great soundtrack, though not necessarily of anything else. So how does he do it? Quickly, apparently...

...Anyway, I got a call from White Star yesterday evening, they'd dragged me down to Birmingham on the Thursday, plonked me in a hotel room with a machine and a really terrible mosquito at about 10 o'clock in the morning — and I finished the music for *Commando* at about 8 o'clock the following morning. I still haven't seen the version that's gone on sale!*

Commando

Rob's native Yorkshire lout is overlaid with a Gervais twang, the result of spending the last nine of his thirty years to date in Newcastle (though continuing success makes an early move to London not mere conjecture...)

"That's about the fastest, start to finish, that I've done. I'm not quite pleased with the main theme, but the Heisman tune, which I wrote at 6 in the morning, really sounds like the kind of thing you put on at a party at 4 o'clock in the morning!"

In the case of *Commando*, Rob was at least

shown a demo version of the game. Some times, he's not even that lucky:

"I'm working on one at the moment, provisionally called *Master of Magic*. It's being written by Richard Darling for Mastertronic, and all I know about it is use the adjective he used to describe it to me over the phone: 'Sorcery! Wizards! Medieval!' Not a lot to go on, but it's basically the most complex thing I've done so far."

Given the opportunity, though, Rob usually takes about two weeks to complete a soundtrack:

"Off and on, not working continuously, I usually get up, check some coffee down the neck, scratch everything on, and stick at it until my brain starts coming out of its skin. I go to bed for an hour, have something to eat, wash a couple of hours of garbage off the TV, and stagger back again — sometimes for 12 or 14 hours a day, if I'm not giggling with my band!" (Rob manages to fit a little giggling with a fiscal white hand in between tracking sessions.)

The reason that Rob gets to work on a program — and, more importantly, the car he becomes involved in the writing of it — is the more "integrated" the results tend to be, as his work on forthcoming *Wrestlemania*, *Carey the Gorilla*, *Scorpionsoft*. Rob was supplied with a VHS tape which by him we all the scenes ("just as well — I'm useless at games — when I was working on *Thing* on a taping I managed to doctor it to make it easier for myself" — and I could still only get a couple of thousand points!)

Carey the Gorilla, which involves crawling around inside a human body, has afforded Rob the opportunity for some pretty disgusting sound effects (watch out for the Bladder and Bowel) and effective audio/visual links (a: a running 'train' response complete with wheels, and the clack of wheels over track.)

"Basically," he explains, "you have to take your pick — either you have a 'hostile' running all through the game, with maybe a few effects thrown in at the right moment, like the monster-like noise in *Commando*, or you have sound effects for every little thing that happens, and on screen. Usually, you only have about 96 for all the music and sound effects anyway. I think most rooms I've ever had was 96, and I have squeezed into 96 before now, so you have to be clever... In *Commando* there is so much happening on screen all the time that if you had sound effects for all of them, they wouldn't fit, so my point in having my music, I generally do both music and sound effects, though, despite the fact that people seem more interested in the music now, so at least the chips have the choice if they want. It varies from job to job — on *The Human Race* for Mastertronic, all the 'jungle' noises and sound effects had already been written, which left me with only one



pushed a lawnmower through tall grass through waist-high snow at 4 o'clock on a January morning?"

Now free, TV and currently filming Bob's "concept musical" *Weeks*, "about life, society, and the whole lot, y'know?" but it is now computing which offers him his most satisfying — and lucrative — creative labour, from, since Bob bought his first machine to keep ahead of the impact he could see computers having in music. He was considering the new *Imaginari* Macintosh (how history would have been changed if he'd bought it!) but when the price of the *Clie* dropped that first time to the £230 mark, Bob, intrigued by its musical facilities, took the plunge.

Competition

"I was completely self-taught, starting off like everyone else with Basic graphics routines, but the great thing about the 64 is how it encourages you to get into machine coding. I think I wrote my first machine code routine after about two months."

From the very start, Bob had an eye on the commercial application of his new hobby.

"At the time, about 3 or 4 years ago, the games boom was at its height, and there was no decent educational software about at all. So I wrote two of these music tuition programmes — Pitch training, sight reading — and sent them out to companies. No response.

"Then it occurred to me that there were specialist graphics programmes — why shouldn't there be specialist music programmes and? That's where I decided to go it alone. I guess my breakthrough games were *Endurance* and *Monty*. Since then, I haven't had to look so hard for work." He laughs.

Does he ever worry about the whizkids competition, I wonder?

"As far as music is concerned — not really. There are a couple of people I respect — the guy from China who did *Hypnotica*, the American (old) who did *Maze of the Lungs* and *Activision's Book of Beatz*. It's good, but I break into the games to see how he did it — if you've got a machine code monitor and enough patience, then you can break any Turbo — and, from what I can gather, his coding is really inefficient — he just reads the music like any other data, loads all the information each time for every sound, which uses up bags of memory. The system he developed is very efficient. Musical data — pitch, duration and so on — goes in on one channel, and the actual sounds on another."

One of the strongest features of Bob's best work is the way in which the music enhances the atmosphere of a game — listen to his number one for *Maniac's Zulus* and you'll see what I mean. Does his musical training help?

"Oh, definitely. One of my early games seemed to call for a 'folksy' feel, so I went out and got an album of Bluegrass Fiddle music, and a couple of song books..." (Bob played me the result, complete with finger-picking fiddle and reasonably realistic howdown fiddle. I was,啊, impressed!..).

for instance, on *Master of Magic*, I've been looking at a few nephilim scores to help with the feel. In general terms, though, it's fairly obvious what to go for. One of the games I'm working on should be out in time for Christmas, so I've made all the tunes in it Christmas."

Does his own taste in music influence what he writes?

"My tastes are very wide, but I make a point of listening to the Top 40 every week. After all, most of these tunes get in young kids, so what's the point of putting in some obscure classical piece? They have to hear something they can relate to. One of my favorite tunes, *Crazy Counter*, was a sort of competition between New Orleans, who I really like, and a typical funk thing using a sort of 'Slap-beat' sound... it all depends. Sometimes the tunes are really original, sometimes, if inspiration doesn't strike, I adapt things, change them, make them my own. Monty was like that — it started out as the theme from the old radio descriptive show, *Dick Barton*."

Bob draws the line though at the more real towards-direct transcriptions of arcade game tunes, or his records. "I mean, what's the point? If you were to hear *Baba*, put a record on, I felt really sorry for Tony Christopher over *View to a Kill*. When people have heard something so often, they're bound to be disappointed by a computer version. It's the same with the arcade games. They're very good in a way, pushing programmers to get as much as possible out of micro adaptions, but you have to be realistic. These machines have six or seven dedicated sound channels — you can't compete with that, you have to adapt, and put the best you can out of your machine." And here, just for opinion's sake, do you do that? He laughs. "It takes me long while to develop my creations, and I'm not about to give them away!" Bob hinted that one company which had made use of one of his clever tricks might shortly regret having lifted his creation!



"Mind you, there are some general points that people might be interested in. I think the key for me was understanding how interrupt work — ninety-eight percent of all games work on raster interrupts. If you make sure your raster routines are run from them. Obviously as time's gone on, I've built up a little set of routines which let me do everything a lot more efficiently and quickly. I like pinball,

voices to do the music with. It was like doing it with one arm behind my back!"

"It's quite bizarre," he adds, "I think too much emphasis is put on sound effects, especially in reviews. Clients say to you 'OK, I want an effect for the bit where the arm drops off and hits the body.' Now, what are you supposed to do about that? If the sound doesn't sound right, then the player'll give you a shagging — which is missing the whole point.

Of course with things like explosions or bullets, it's easy to make it specific, but personally I think it's preferable to keep things loose."

A relative newcomer to computers, Bob was until about four years ago, keeping things very loose, playing his trade as a professional musician, turning the skills gained from a lifetime playing and three years at music college to a variety of musical jobs. "I've arranged for string quartets and jazz-rock groups, worked as a musical copyist, and even

and use it a lot — a routine I developed while working on *Bladey*. I also like things to sound rich, not simple. For you may play with reverb, short and long, and a effects routine — between them, you can get some great sounds. Ring Mod and Sync are about the most versatile things on the SID chip though — hard to use, of course, because they take one off the voices, but they offer the best chance of getting distinctive sounds." This personal favourite is the very modern 'metal' chink which generates the *Bladey* theme. Despite *Bladey*, watch out!

Trinkering

"I soon worked out that as long as you keep something going — the baseline, or a bit of percussion — you can 'read' the other voices for a quick bit of that or impressive noise, without interfering with the music. On something like *Commando* I've taken it to ridiculous extremes — there's hardly a moment when the same set — voice I carry the tune, with the second and third voices filling in over the top — doing different things... although the impression of so many voices playing at once is helped by proper musical arranging as much as being a whiz at programming."

Could you describe the composition of a piece from now to *Finaly*?

"Usually, I start by trinkering around with that," he indicates a battered, and very basic Casio portable keyboard. "It's a bit of a discours, but it does the job, and it's dead portable. Or, I'll start by sketching a few ideas on a manuscript layout. The baseline goes down first usually, and maybe a bit of

percussion. Once I've got a base line still worked out — and on bad days, that can take a long while — then I bring in the machine, just keeping reverb, and start to develop a little melody on top, adding it in while the baseline is still running. That's when I start experimenting with sounds too, using a bit. *Bladey* Source Code File I set up which can be edited while the pattern's running. Some of my best sounds, like the little 'voices' in the *Finaly* theme have come about from tinkering, happy accidents which I hang onto; but obviously, having had a lot of experience of synthesis and things, I've got a good understanding of ADSR, Ring Mod, and so on... If I've got an idea for a particular sound in mind, I usually know how to go about getting it..."

"With the basics worked out, it's a matter of building it up as it goes along, using available 'parts' to steal new voices for a moment."

Utilities

Results are measured over the 'typical game system' he uses for all his work. No synthesiser here — just a separate little room, a 40 disc-drive, and a little black and white TV. Sometimes, he'll try it out through his (surprisingly ordinary) BBC and that's it.

"It's like in a recording studio, where you listen to the final mix over tiny monitors — if it sounds good there, you know it will when people play it at home."

The speaker approaches extends no programming side. "I've got a couple of Turbo loaders the disc drive, and *Amiga* that's

Assembler package, but that's about it... I was very impressed with the Orpheus Electronic music utility — with that, someone who knows what they're doing should be able to put me in the dustbin."

Had you ever considered a music utility yourself?

"No, because I can't think of any way to make my methods accessible enough to the average punter to make it worth while."

Amiga

What about the future? "Of course, as a programmer and a musician, I'm very keen to get my hands on an *Amiga* — 'Nightflight computer', 4-channel stereo — I'm trying to get as much technical information as I can about its sound chip right now... As far as the SID goes, I'm probably going to carry on with *Mastertronic*; they now pay me over five times per game what I started out getting! But I'm also keen to do other things."

I can now get the SID chip to do more or less anything I want, I don't think there's anything more interesting I can do with it. The next thing would be an absolute monster game, with 10 or 128 or more SID sounds, featuring very close synchronisation between sound and action, like a cartoon. I've made contact with a very bright young programmer in London who's keen on the idea too — something like a *Tint* and *Jerry* cartoon perhaps. I can hear the music for it now..."

"I hope it's not too long before we do. Thank you, Bob Blighty — the first Commodore 64 pop star! ■

C16/PLUS 4 CENTRE

HUGE SELECTION OF SOFTWARE
NEW TITLES ADDED EVERY DAY
DUST COVERS/
EXPANSION PACKS/BOOKS
IN FACT EVERYTHING TO DO
WITH C16/PLUS 4

SEND S.A.E. FOR OUR CATALOGUE FREE
PAYMENT BY POST ACCESS/P.D. CHEQUE
POST AND PACKAGING FREE S.H.B. (UK) AND 10/100PS (OVERSEAS)

ANCO MARKETING
85 TILE KILL LANE
BEXLEY, KENT
Tel: (0322) 522651

TOOLKIT IV

16/32K UTILITY

COMPLETELY NEW - ENHANCES ALL THIS...

VERSION 4.0 - allows you to read, edit and write 16/32K programs, BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

VERSION 4.0 - also allows you to read, edit and write 16/32K programs, and BASIC programs, and BASIC source code, and BASIC source code with comments.

</



Is the C128's powerful new programming language enough to make it a more attractive prospect for the student of Basic? Tony Hamilton-Smith looks at Basic V7.0

C128 - basically better?

MANY CLAIMS have been made for the programming power of the Basic 7.0. Are they justified? Over the next two months I will try to give you an idea as to whether they are true.

The C128 has three modes of operation, C64, C128 and CP/M mode. At this point may I digress and stipulate that CP/M will not run on the 1541 disk drive. The CP/M mode will perform ALL functions on the 1541 disk drive, even if it is at a slow speed. Having cleared up that nonsense, back to C128 mode!

Increment:

To aid the writing of programs, the C128 Basic V7.0 has a few extra commands: AUTO, DELETE, HELP, RENUMBER, TRON and TROFF.

AUTO will switch on or off an auto line numbering facility. This is very useful for the last entry of programs. When using auto, the line number increment is set by the program user to whatever value is suitable. A useful feature of this command is the case in which a set of lines can be duplicated. Display the lines to be copied on the screen, switch on the auto line numbering and then remember the first line in the new line number. When you Press **auto** to store the line, the next line on the screen then displays its new line number ready for you to press the return key. There is an anomaly with the auto command if you are using auto to enter some lines between existing lines of basic. When auto comes to an existing line it does not display the line's contents or warn you that you are overwriting it.

DELETE allows the deletion of lines of

program from memory. The start and finish lines for deletion can be set by the programmer. Using this command is obviously a lot easier and quicker than typing in each line number and pressing return.

TRON is one of the most time saving commands that has been added to aid programming. This command allows you to redefine the function keys, though this may not seem very useful at first glance. Over the command to reprogramme the function keys to more often used keywords or phrases. A lot of time will be saved by using the single stroke function keys to print a setting of characters. Key has another function as well. If you just type in "key" and press the return then all the function keys and their assigned variables will be displayed.

RENUMBER is the last of the program entry aids, rather than debugging aids. Renumbering a program has two benefits: the first is that the program will look neater, the second benefit is that renumbering creates space for insertion of extra lines. The renumber command allows either all the program to be renumbered or part of the program starting from a specified line. The new starting line number and the increment between the lines are set by the programmer. A word of warning: before renumbering always save the program. If during the renumbering the line numbers exceed 64000 the system may crash. If you have a large program then switch the C128 into fast mode for renumbering as it can take a long time for numbering as it can take a long time for numbering. For the correct way of doing this see section 17, page 54 of the system manual.

HELP is the first of three debugging aids.

If a program stops with an error message, then either press the help key or type "help" and press return. The help function will display the line the error was found in, and highlight where the error was found.

TRON and TROFF are two commands used for switching on and off the trace function. It is possible to trace a whole program, but I do not recommend this as every time a line is executed the line number is displayed on the screen obscuring the screen layout. The best way to trace a problem is to insert the commands into the program just before and after the suspected area.

Structure:

This next section covers improvements to the BASIC for "standard" programming, that is, not sound or graphics, which will be covered later. There are many new commands in this field but they can be broken down into three areas: Disk, Structured and Programme friendly commands. I will cover each area separately.

Disk commands have been added to the C128 because if you do not have a disk drive then you will under utilise the C128 by about 50%. As an example of this, there is about 55K of memory available for BASIC programs available are held in a separate memory area. Imagine how long the tape would take to load a 15K program, even with turbo loading! The disk commands added are the standard BASIC 4 type commands such as DLOAD etc. In total there are sixteen new disk commands available for use. These commands cover data loading to relate file handling and disk house keeping.

Structured commands have been included to try and help make better programming methods. The structured commands fall into two categories, looping and error trapping. To help with loops and 'if then' Commodore has added **ELSB**, **DO**, **LOOP**, **WHILE**, **UNTIL** and **EXIT**. The advantage of the loops is that by using the **WHILE** and **EXIT** commands you can jump out of a loop without causing problems with stack addresses. The 'if then' statement has been improved by the addition of the commands **IFTHEN** and **ENDIF** as well as **ELSB**. Now an 'if then' routine can cover several lines of program.

The second area of structured commands is the error trapping commands. By using the commands **TRAP** and **RESUME** and error routines need not crash a program. The programmer has to plan ahead to find what corrective action is required on finding an error but this is just good programming practice anyway.

Control

Programmer Friendly commands are commands that have been included to give greater control over the computer. On the Commodore 64 nearly all the following commands could be achieved, but only through extensive use of poops and pokes.

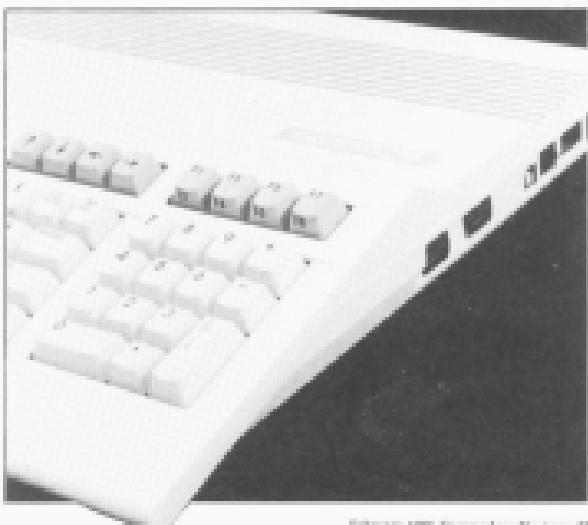
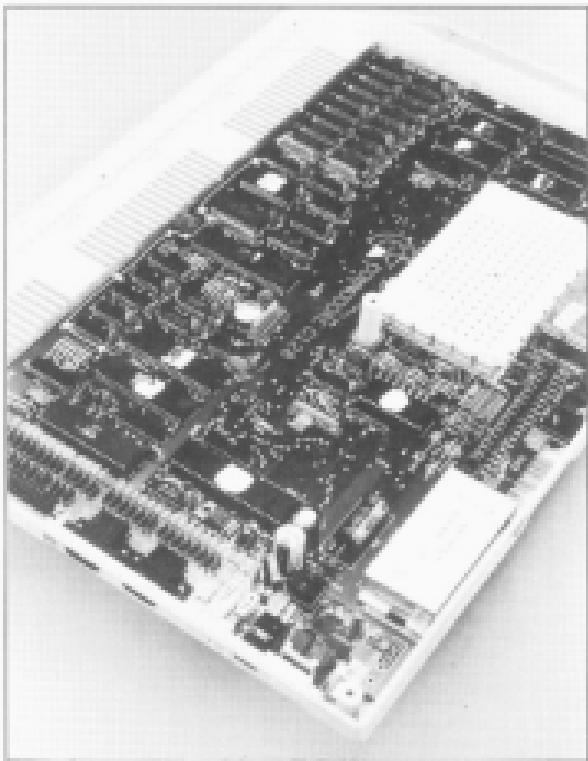
For easier passing of the programme during running the C128 has two new commands, **SLEEP** and **48TKEY**. **Sleep** will pause the program by the number of seconds specified after the command. **Getkey** works like the usual **get** command but it waits for a key press before continuing. Another command that has changed slightly is **RESTORE**. This now can be restored to a given line number. For the machine code's two new functions have been added **DISC** and **BLASH**, these are used to convert between hexdecimal and integer and back again.

The major addition to me mind is the introduction of the **UPSTR** function. This allows one string to be compared with another and the starting position of the first string is reported. This is great for menu commands where the first string is the option and the second string is the master option. By knowing the position of the option the correct subroutine can be called. Other additions to the BASIC are windows and the reading of joysticks, paddles and light pens.

In this first article I have looked at the improved commands which and the art of actually entering the program and debugging it. All told there are 64 new commands or functions for making programming. This does not count the new commands for graphics and sound. Of the 56 commands, 14 commands are additional even to the C15 and Plus/4 BASIC.

My overall impression of the Basic V10 commands reviewed above are that the C128 machine is very much easier to program and use than the C64. It is a pity that procedures and a merge command were not included in the basic, but you cannot have everything, I suppose.

Next issue we'll look at the new graphics and sound commands which make it easier to control the SID chip and hi-res Graphics of the C128. ■



Space Snakes on the 64

The first part of a high-speed machine-code engine game by Chris Woods

THIS IS the first part of a high-speed machine code arcade game for the 64 by Chris Woods. Since the listing is quite long, we are publishing it in two parts, so make sure you get next month's issue for the final portion.

In Space Invaders, you control the grey spaceship using the joystick in port two. To fire your lasers, press the fire button and move the joystick in the direction you wish to fire.

If you hit a Space Shooter, you will gain points, but to get into the next screen you must eliminate the green biopods completely.

As you progress, the number of asteroids will increase, and after the first screen, deadly Deathballs will appear. When you pass over anasteroid or a Deathball, your energy level will decrease, and when it reaches zero you will die.

You can speed up the game by pressing F9, or slow it down by pressing F5. To return to Basic, press F1.

To run the listing, first type in this month's investment and save it. Next month, load up the first part and carry on typing the second part. When you have done so, save the entire listing, then run it. The program will search in each file, check it, and add a little summary.

If there is a mistake in the checksum, the program will tell you which line it is in and stop. When you have corrected all your mistakes and the whole program checks through without any errors (this takes around five minutes), you should save the program again.

To play, load the program and type **SSS** [enter].

You are the last defender of your home planet against the Space Snakes, Blasteria Asteroids and Blotons. Watch out for the gauntlet which will destroy you if you hesitate too long. Good luck! ■



Easymusic

DATAENTRY is another file utility. It consists of PUBLISHing values into the registers of the M68HC11 in order to initialize it easily. The

estimated format is as follows: STG821, V, A2, 300, LF, SR, W, D. V = volume, A2 = attack/decay, 300 = high frequency of note, LF = low frequency, SR = sustain, W = waveform, D = decay.

parameters, consult the Programmers' Reference Guide, or just experiment!

For an example, though, try 3773 (323), 13,193,12,37,188,37,1. At present, the program loads in the cassette buffer, but this can be altered by changing line 10.

```

19 FOR T=828 TO 943
20 READ R
21 FOR T,R
22 NEXT
9000 DATA 32,241,183,142,232,3,32,241,183,142,233,3,32,241,183,142
9010 DATA 234,3,32,241,183,142,235,3,32,241,183,142,235,3,32,241
9020 DATA 183,142,237,3,32,241,183,142,239,3,173,232,3,141,1,212
9030 DATA 173,233,3,141,5,212,173,234,3,141,1,212,173,235,3,141
9040 DATA 0,212,173,236,3,141,6,212,173,237,3,141,4,212,173,238
9050 DATA 3,141,239,3,169,233,162,235,262,206,233,136,298,246,206,239
9060 DATA 3,169,6,265,233,3,265,236,169,6,141,4,212,141,5,212
9070 DATA 141,6,212,36

```

Butterfly

Fill in the name for the 1st column from Joseph
One of Robins' books.

THE OBJECT of this game is to catch the
ball safely while avoiding the obstacles.

cat. You have three chances to do this, and with a time limit of thirty seconds. Each time you succeed you will be rewarded with a bonus life. You are the white butterfly, which is controlled with a joystick in port D.

Program Notes 10-110, introduction and
synopsis, 100-101, and notes and read sections.

500-130, prim rsize: 570-680, set new sprite position: 680, flag wings: 700-800, check for sprite having screen: 820, peek new sprite position: 840-860, check for collisions: 860, flag wings: 880-1440, sprite dead: 2000-2200, end of frame: 2000-2040, sound effects: 2000-2040, end of game.

```

18 REM BUTTERFLY BY JOSEPH ORTT
19 POKE53289,0 POKE53291,0 POKE646,1:PRINT"3"
20 V453248,18=54272
21 FL,B="*****"
22 PRINT"288BUTTERFLY":PRINT"-----"
23 PRINT"IT IS THE MATING SEASON, YOU MUST CATCH YOUR SHY PARTNER (YELLOW)!"
24 PRINT"WHILE AVOIDING 'KIM' THE CAT."
25 PRINT"8888888888 JOYSTICK IN PORT 2"
26 FOR I=1TO2NEXT I
27 FOR J=1TO4NEXT J
28 REM READ SPRITE DATA
29 POKE2040,192 POKE2041,192 PORT=87062:READH:POKE12288+T,A:NEXT
30 POKE2042,193 POKE2043,193 PORT=87062:READH:POKE12352+T,A:NEXT
31 POKE2044,194 PORT=87062:READH:POKE12416+T,A:NEXT
32 POKE2045,195 PORT=87062:READH:POKE12480+T,A:NEXT
33 REM GAME LOOP
34 SC=0:TY=0:POKEY1703
35 POKE53289,5:POKE53291,5:POKE646,6:PRINT"2":FORO=1TO14:PRINTFL,B:NEXTO
36 PRINT"-----"
37 PRINT"3":B=0:TY=0:POKEY1703
38 PRINT"-----"
39 POKE=1TO14-LV:POKE1824+48*22+G,211:POKE53296+48*22+G,7:NEXTG
40 POKEV+39,1:POKEV+40,7:POKEV+43,0:POKEV+44,1:POKEV+27,16:POKEV+21,0
41 X#=225:Y#=183:XB=39:YB=50:XC=29:YC=165
42 T1#=88888888
43 POKE1429,PEEK(V+29)OR16:POKEY+29,PEEK(V+29)OR16
44 REM READ LOOP
45 PRINT"-----"
46 CLS:T1#=DFVAL:CL00398THE1Q009
47 FOR I=1TO2-VPL:CL00398:PRINT"3":NEXTQ:PRINT"29 B":POKE646,1
48 JV=PEEK(54328)
498 IF JV>127THENLP=JV
500 IF LP=126THENJV=JV-9
501 IF LP=125THENJV=JV+9
510 IF LP=127THENJV=JV-9
520 IF LP=123THENJV=JV+9
530 JV=JV+128
540 IF JV>127THENLP=JV
550 IF LP=126THENJV=JV-9
560 IF LP=125THENJV=JV+9
570 IF LP=127THENJV=JV-9
580 JV=JV+128
590 JV=JV+128
600 JV=JV+128
610 JV=JV+128
620 JV=JV+128
630 JV=JV+128
640 JV=JV+128
650 JV=JV+128
660 JV=JV+128
670 JV=JV+128
680 JV=JV+128
690 JV=JV+128
700 JV=JV+128
710 JV=JV+128
720 JV=JV+128
730 JV=JV+128
740 JV=JV+128
750 JV=JV+128
760 JV=JV+128
770 JV=JV+128
780 JV=JV+128
790 JV=JV+128
800 JV=JV+128
810 JV=JV+128
820 JV=JV+128
830 JV=JV+128
840 JV=JV+128
850 JV=JV+128
860 JV=JV+128
870 JV=JV+128
880 JV=JV+128
890 JV=JV+128
900 JV=JV+128
910 JV=JV+128
920 JV=JV+128
930 JV=JV+128
940 JV=JV+128
950 JV=JV+128
960 JV=JV+128
970 JV=JV+128
980 JV=JV+128
990 JV=JV+128

```



```

499 XC=00+LV=1 : 2F90C0CTHENWC=0C-(LV#2)=2
500 YC=YLV=1 : 2F90C0CTHENWC=0C-(LV#2)=2
501 POK2040, 193 POK2041, 193
700 2F90C08THEHWH=08
710 2F90C05THEHWH=05
720 2F90C06THEHWH=06
730 2F90C09THEHWH=09
740 2F90C08THEHWH=08
750 2F90C05THEHWH=05
760 2F90C06THEHWH=06
770 2F90C09THEHWH=09
780 2F90C08THEHWH=08
790 2F90C05THEHWH=05
800 2F90C06THEHWH=06
810 2F90C09THEHWH=09
820 POKEY, WA POKEY+1, YB POKEY+2, XC POKEY+3, YB POKEY+4, XC POKEY+5, YC
830 2F90C08THEHWH=08
840 2F90C05THEHWH=05
850 2F90C06THEHWH=06
860 2F90C09THEHWH=09
870 POKEY+21, 255 POK2040, 192 POK2041, 192
880 6010 500
1000 REM DATA BUTTERFLY - SPREAD WINGS
1100 DPTH-8, 8, 8, 15, 4, 8, 32, 2, 8, 64, 1, 9, 128, 9, 129, 8, 68, 68, 68, 127, 36, 254
1120 DPTH255, 153, 255, 255, 255, 255, 127, 126, 254, 63, 126, 252, 95, 126, 250, 239, 96, 247
1130 DPTH255, 126, 255, 127, 255, 254, 125, 255, 190, 59, 130, 226, 55, 69, 236, 29, 69, 26, 9
1140 DPTH 8, 24, 16
1200 REM DATA - BUTTERFLY
1210 DPTH129, 8, 8, 129, 8, 8, 68, 8, 8, 68, 8, 8, 68, 8, 1, 165, 128, 1, 165, 128, 1, 165
1220 DPTH128, 1, 255, 128, 2, 255, 128, 3, 255, 128, 3, 91, 64, 3, 127, 64, 3, 127, 64, 3, 127, 64
1230 DPTH 3, 213, 192, 3, 255, 192, 3, 255, 192, 3, 255, 192, 1, 153, 128
1280 REM DATA - EIN
1210 DPTH-8, 176, 1, 125, 48, 24, 254, 48, 24, 254, 112, 24, 254, 96, 24, 254, 56, 24, 254
1220 DPTH12, 124, 192, 14, 254, 192, 15, 255, 9, 7, 255, 8, 1, 255, 96, 1, 255, 96, 1, 255, 96
1230 DPTH13, 255, 96, 13, 255, 26, 12, 254, 289, 13, 125, 144, 19, 16, 32, 14, 12, 192, 8, 9
1400 REM DATA - HEART
1410 DPTH-8, 96, -7, 129, 246, 31, 195, 246, 127, 231, 252, 127, 231, 252, 127, 239, 254
1420 DPTH 255, 191, 254, 255, 191, 255, 255, 191, 255, 255, 223, 255, 255, 255, 255, 254
1425 DPTH127, 247, 245, 127, 251, 255
1430 DPTH103, 255, 246, 31, 254, 240, 15, 255, 224, 7, 255, 192, 3, 255, 128, 1, 255, 8, 8, 254, 8
1440 DPTH8, 124, 8, 8, 56, 8
2000 REM RUN OUT OF TIME
2005 PRINT "#XXXXXXXXXXXXXX" YOU RAN OUT OF TIME <<
2010 FORD-1T010:00SUB0000:POKEY+21, 8 FORD-1T0200:HEXTD:POKEY+21, 255 HEXTD
2006 SC=50+80*VRL(CLF#)>>CLV#100+200
2100 REM SUCCESSFUL LIVE
2110 SC=50+60*VRL(CLF#)>>CLV#100+200
2115 FORD-1T010:195:POKEY+2040, 195:POKEY+21, 1:00SUB0000:FORD-1T040:HEXTD
2150 POKEY+21, 1: FORD-1T000:HEXTD:HEXTD:POKE2040, 192:LV=LV-1:TV=TV+1:HEXTL
2190 POKEV+39, 8:GOTO4000
2200 REM FILED LIVE
2210 SC=50+100*VRL(CLF#)>>50
2212 PRINT "#XXXXXXXXXXXXXX" KTH GOT YOU!! <<
2220 FORD-1T010:POKEY+21, 8:00SUB0000:FORD-1T0200:HEXTD:HEXTD:HEXTL:GOTO4000
3000 REM PIP-
3005 FORD+45, 9:POKE8+6, 8:POKE8+24, 15:POKE8+24, 15:POKE8+1, 129:POKE8, 135
3020 POKE8+24, 15:POKE8+1, 129:POKE8, 135
3040 POKE8+4, 17: FORD-1T000:HEXTD:POKE8+4, 16:RETURN
4000 REM EH#
4010 POKEY+21, 8:IFSC0HGTHEHWH=9C
4020 PRINT "#XXXXXXXXXXXXXX" SCOREM,, SC:PRINT "#XXXXXX HIGH-SCORE#":HS
4030 PRINT "#XXXXXX NO. OF LIVES#":LV#3
4040 FORD-1T000:HEXTD:GOTO4000

```

Send your Computer programs, including a cassette — and a printout on plain white paper if possible. Each listing must be accompanied by a typewritten introduction describing the program and explaining how it is constructed. We pay £6.00 for each listing published. We cannot guarantee to return every program submitted, so please keep a copy. If you want us to return your listing please include a stamped, addressed envelope. If you have any problems with the programs, please write to the appropriate author, Software File, 100 Newgate Street, London EC1A 7AA, England.

VIC 20 GAMES

from

VIC 20 FANS, rejoice! If your micro is feeling neglected, we have a great offer from Llamasoft which will make your Vic jump for joy. TWENTY lucky winners can get packs of THREE smash-hit Jeff Minter games, just by entering our simple competition.

All you have to do to win is to look at the picture of Jeff and one of his furry friends. We all know Jeff is known as The Hairy One — but can you think of an appropriate name for the shaggy toy?

When you've come up with a suggestion, put it on a POSTCARD or the back of a sealed envelope, together with your name and address, and send it to **Llamasoft Contest, Computer Horizons, 12/13 Little Newport Street, London WC2H 7PP**, to arrive by the last day of February. The twenty best entries will win the games, and the winners' names will be published in the April issue. All normal competition rules apply. ■



ALL HELL HAS BROKEN LOOSE



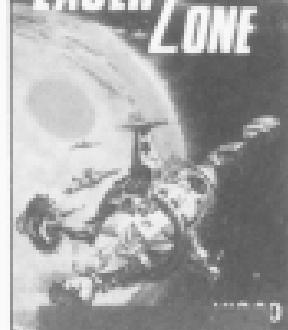
■ **HELL GATE** is a super-fast game for the 8K or 16K expanded Vic 20. You control two interactive speed cameras, and your task is to annihilate every alien you see — but apart from the goats!

METAGALACTIC LLAMAS BATTLE AT THE EDGE OF TIME



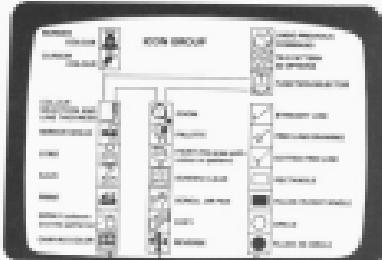
■ **METAGALACTIC LLAMAS BATTLE AT THE EDGE OF TIME**, for the unexpanded Vic 20, features synonymous space spiders trying to defeat your heroic llama.

LASER ZONE



■ **LASER ZONE** is another all-action shoot-'em-up, as you master the control of vertical and horizontal guns, working together in a top-notcher assault. For the expanded Vic 20.

MS 2000 COMMODORE MOUSE



The MS 2000 is a beautifully designed peripheral used to move the cursor simply and quickly around the screen like a drawing pen, paint brush or air spray. This popular device is so natural and friendly to use that it will add an exhilarating new dimension to creative art, CAD, design and business drawings such as graphs, pie charts and plans.



The MS 2000 is a high quality mouse with a RUBBER COATED BALL which is quiet and will not lose accuracy through slippage. The hardware incorporates an OPTICAL ENCODING technique in the mouse which has a resolution of 100 points to the inch. It is accurate, reliable and repeatable.



ONLY £64.90 INCL. MS2000 + CASSETTE, DISC OPTION £3.50 P&P £1.60

Commodore Marcom: Certainly the best mouse for the 64. "PCM" Hardware excellent, software technically winning

WIGMORE
WIGMORE LIMITED

"Wigmore" has to be the best.
Also available: MS2 8000 & the famous BBC MEGA MOUSE

32 Seville Row, London W1X 1AG. 01-734 0173 - 01-734 8826

Cheetah
Marketing

Marketing
are proud to announce
the arrival of their
125 Joystick

Compatible with ZX Spectrum, Commodore 64, BBC 3000,
Amstrad, Atari, MSX etc.

At only £8.95 the features on the 125 are second to none. Besides its unique internal structure, best to estimated memory consumption from even the most vigorous games player, the joystick consumes no less than four extremely sensitive fire buttons. These are housed in the hanging wheel. This has been modified for extra comfort and ease of operation. The trigger lever fire button provides ease and comfort for your finger and the top fire button is positioned to fit your thumb for just one thumb. The base fire buttons are positioned for easy control and they have nothing whether you are right or left handed.

A built in sprung pitch provides continuous pivoting at the touch of a fire button.

The 125 comes complete with a full 12 month warranty and is available from High Street stores and all good computer shops.

ONLY
£8.95

Postage and Packaging. Delivered normally 1-4 days.
Overseas delivery by air mail. Please enclose airmail
label and postage.



with this
NEW JOYSTICK
from

Cheetah Marketing Ltd.

1, Whitchurch, Newbury Park, Oldham Road, St. Helens, Cheshire.
Telephone: 061 737 7733. Telex: 487083.

THE FINAL CARTRIDGE

THE FIRST OUTSIDE OPERATING SYSTEM FOR THE CBM 64 *



This new operating system built in a cartridge does not use any memory and is always there. Compatible with 98% of all programs.

DRIVE TURBO • 80 more torque
• 80 more torque.

TABLE THREE - 10 items form even-odd test - normal distribution
commands - compatible with standard notation.

ADVANCED EDITORIAL FEATURES - comprehensive tools for the magazine, newspaper, brochure, poster, and Commercial printer programs. Print all the Commercial graphics and control colors (important for printing).

ACADEMIC CLIMATE FACILITIES - of low-
est cost and maximum convenience.
Plans full page over 12 weeks of Gary
for maximum pleasure, more from gardens
and programs like Double Dutch and
Picnics etc. - Schedule automatically for
the meeting address of the Police
Academic program available for the CBB
BELL and BELL locations.

386 EXTRA RAM FOR BASIC-PROGRAMS AVAILABLE. These three commands, "Memory = 1600", "Memory = 2000", and "Memory = 2400", when entered, will load up to 1024 bytes each of memory, starting at the first byte of memory. They can be used with any program, and will not affect the memory of the BASIC programs.

Robert J. D. (Robertus de) - see *Robertus, Robert, Bishop, Canterbury, 1097*

卷之三十一

- **REVIEW OF THE LITERATURE** - **RESULTS** - **DISCUSSION** - **CONCLUSION**
- **RESULTS** - **DISCUSSION** - **CONCLUSION**
- **DISCUSSION** - **CONCLUSION**
- **CONCLUSION**

ON-OFF switch - use switch you have
nearest from you

FREEZE FRAME

Response media values for page 20 from stamp price list.

PRIMED-SEPARATED FUNCTIONS
B. E. B. - Bys., Lest., Min., Citing, Dis-
cussions, Use of terms at the
present time.

STANDARD (STANDARD) - Allows you to define part of a line, step, and curve, as long as those curves or lines approach corner. Points and Bezier at this. Very useful for defining your problem as a boundary.

FREEZE FRAME

16 days since
last generation
of eggs were
observed.

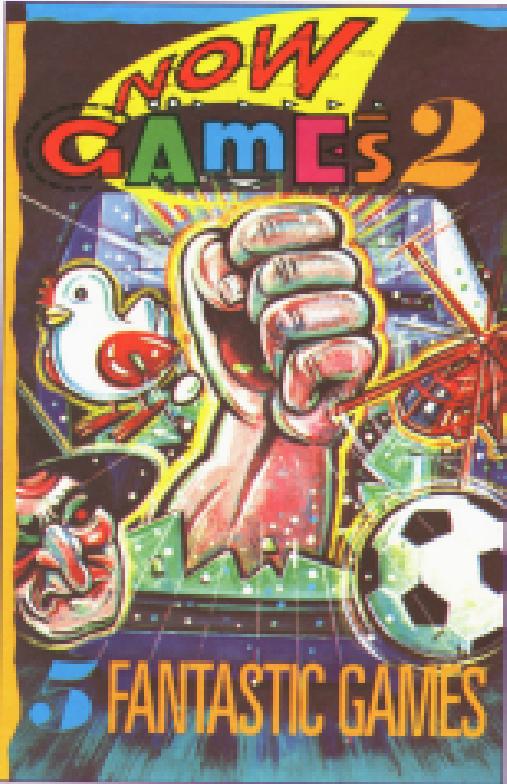
1.2. *Microbial metabolites*

40
H&P

U.S. ORDERS Available by mail order
from Computer Masters, or directly from
H & P Computers
H. P. Computers
Wilson House, Caversham, Reading, Berks, RG4 7EH, England.
Telephone: 0276 811477.

Five Fantastic Games

Keep your eyes peeled for NOW GAMES 2. Five major software hits jostle for your attention on this packed-solid-with-fun cassette.



Now that's what I call value



STILL AVAILABLE - NOW GAMES

featuring
Lords of Midnight, Brian Bolland's Stringybogs
Pommersens, Arabian Nights, and Victorian Palace II

by 1985

£8.95

Available from all good software outlets

Also available directly from: Virgin Games Mail Order, 2-4 Vernon Road, Paddington, London W1 2DX.

£8.95

1. **MURKOPOLY** - **Elite Software**
Strategic Monopoly meets the Monopoly on board
computer strategy in this exciting board game which
delights as a leisure game or a social game.



2. **TIME PARADE** - **Camplay Games**
This remarkable series of graphics and animation allows you
to explore the mysterious art of Camplay Techniques, revealing the
mysteries of the Great of Camplay.



3. **CHAKRA BURN** - **Palace Software**
Take up the master challenge and convert the mystery
of the powerful force in this striking arcade adventure.



4. **CHARACTER KIDS 2** - **U.S.P. Software**
Help Max, Maxine, and the crew learn the art of U.S.P.
Character Kids. Known for its fun and unique approach,
you can't go wrong with this exciting arcade game.



5. **WORLD CUP** - **Artic Computing**
This great football simulation lets you control the
rough play in the World Cup final. Play a match
or a tournament against eight opponents.



Game creator

COULD you please advise me on which are the best program development aids for writing games of a commercially viable standard, and tell me where I can obtain them?

D. Clegg
Manchester

IF YOU want to write commercial games you must learn machine code. There is no software package which will do the work for you; although the Microsoft Games Compiler and other similar packages, allow you to design sprites, write music, define backgrounds and so on, the results are not truly commercial. Find a good book on 6502 machine code and get hold of the Supersoft 6502 Assembler (phone 01-831 1146), or look out for details of the new 6502 A assembler from Tim Software, 0634-4881. This new package is said to be faster than any other assembler on the market.

1520 in 80 lines

I HAVE connected my 1520 printer/plotter to device address 4, and am trying to print out at 80 characters per line using Basicscript. At the moment characters shown as lower case on the screen print out as upper case, and vice versa. The same thing happens with Windows 3.0. Is there any means of correcting this?

B. R. Weston
East Sussex

FIRST, is point 1 clear up about Basicscript and the 1520. There is no need to change the printer/Plotter's device number by pressing F1, D, or D, the command line will show "DEVICE 511520B". You can then enter d, and F to print out on the 1520. The change will last until the computer is reset or the option used again.

The solution is to use

problem is to enter the following in direct mode before loading Basicscript: OPEN 4,8 for (0701) 4,8,1 if device number unchanged)

PRINT #4,1 (then insert the disk)

LOAD***,8,1

You will find this explained on page 21 of the 1520 manual, although some editions may deal with it elsewhere.

Tie a ribbon

WHILE using my (MPS88) printer with me 64 recently, the print stopped appearing. The usual movements of the print head and needle matrix continued. Even using the self-test switch produced no results. Could this be a blown fuse, as the manual suggests?

For Davies

Post

IT COULD more likely be a problem with the ribbon. Check whether the cartridge is still in place, with the ribbon properly feed through the print head. If this doesn't solve the problem, try a new ribbon (or the Yamaha equivalent) which can be purchased from any good computer supplier store. If you still have no luck, it might be that the print head has worked loose, and you will need to tighten it. Push the head assembly forward and tighten the two screws to either side, beneath the cartridge.

If all else fails, you'll have to get the machine serviced, either by Commodore or through a local dealer.

Tape to disk

I HAVE recently bought a 1511 disk drive, but I already have many fast-loading games on cassettes, and I would like to transfer them to disk. Is there any way to do this?

Alan Dayal
Cheltenham

THIS IS can be done, by studying and altering the disassembled machine code, but as we've said before we won't give any advice on how to copy protected software, though you will see utilities advertised which will do this.



Instead cartridges are, in any case, often as fast as normal disk programs, but you could try contacting the software companies concerned, many of whom will be prepared to exchange your cartridge version for a disk copy.

Train of thought

I HAVE recently acquired a 1541, 1541, printer and diskette, and I would like to transfer my tape-copying and photographic records to the computer. Can you recommend a program which would fulfil my needs.

Having in mind that BR has 3000 locomotives, in roughly 50 classes, each with a figure number, with a space between the second and third figures; some have the names, the longest of twenty-four letters; each has a home depot with a two-letter code; I have 3000 slots, increasing at around 400 per slot the program must be able to locate a particular locomotive, and add or delete, and preferably the record should be able to indicate whether a particular loco has been "spotted".

J. L. Lupton
Wiltshire

Devon

THESE IS a limit on the number of records which can be stored on one disk, and your requirements will exceed that limit. Although you could "divide" the records up into different sections on different disks, you will need

a pretty powerful package which will sort you around 100-200. Try contacting Precision Software and getting some details of their Superbase package.

This has an option for a hard disk version, although this is very expensive and really intended only for business use, you will find that hard disk is the only way to get your whole record system on one disk. Precision are on 01344 7111.

Fixing Vics

I HAVE a Vic 20 but have been unable to use it for some time as I cannot find a shop in my area which can sell me a replacement power supply. Can you help?

F. Story

Armen

Ford, Dyfed

COMMODORE will sell service Vics at their Cosby Headquarters, though the service is notoriously slow. They may, however, be able to suggest a local approved dealer who can carry out repair work for you much faster. Contact Commodore at 1 Hunter's Road, Weston Park Industrial Estate, Cosby, Northants, NN6-2PS, 0536-265232.

Rampack problem

RECENTLY I bought a 16K available Rampack for my Vic 20 (16K-82). Will I be able to use BR software? If not, is there a program which allows me to use it?

J. T. Moore

Devonshire

Devon

THESE IS probably be able to use BR software with the switch in the 16K position. The RAM available should be from \$0000 to \$FFFF, of which BASIC uses \$1000 to \$5FFF. If you try to load a machine code program which exceeds past \$5FFF then it won't load, but it's highly improbable that any software producer would write a package which loaded past the expansion on which it's designed to run.

"dialog..."

SAVE £79.75 on Professional Business software for the CBM C64 & Plus/4 Computers

TRANSACT Book-keeping System

TRANSACT is a book-keeping System and Purchase ledger package. Provides a flexible alternative to manually operated systems. Handles general accounting transactions. Suitable for Accountants and small business applications.

Full Trial Balance printed excludes null Accounts. VAT accounts and ledger controlled through Finance Accounts. Positions Print in List, Name and 'Open' Balance (plus).

Price Cassette £29.95 Disc £34.95

SALES LEDGER and invoice processor

Open Item Accounting System. Print position of invoices from product coding. Multiple rates of VAT allowable on invoices. Business account for 'overpayment' payments. Details and sentiments documents controlled. Totals reporting by item and period. Clients referenced by Name or part name.

Price Disc £34.95

PURCHASE LEDGER

Open Item Accounting System. Automatic payment code. Print reference section code. Details for suppliers and trade buyers. Cheque writing capability. Economic reporting to screen and printer. Suppliers referenced by name or part name.

Price Disc £29.95

STOCK-AID Stock Control System

Single Screen Format display. Reference Unique Stock Code Description 'oucher'. Prints Current List/Out/Current List/Out. Prints 'Open Bought & Sold' to show a number of transactions. Opened/Out (Total B. Sales) to show a number of transactions. Purchase/Manufacture/Stock Level/Units to re-order. B. Value. Update. Balance & Value of Stock/Units of Sales.

Price Disc £34.95

Home Accounts Manager

HOME ACCOUNTS MANAGER is a comprehensive, home management system designed to assist in the management of any household budget. There are 9 major options from the main menu as follows:

1. HOME BUDGET
2. BILLS ACCOUNT
3. LEDGER
4. INVENTORY
5. PAYROLL
6. INVESTMENT
7. EXPENSES
8. EXPENSES
9. FINANCIAL

Price Disc £19.95

We are offering our complete business set for an all in one price of £75.00.

A fantastic saving of 79.75!!

Cheques made payable to Dialog Software



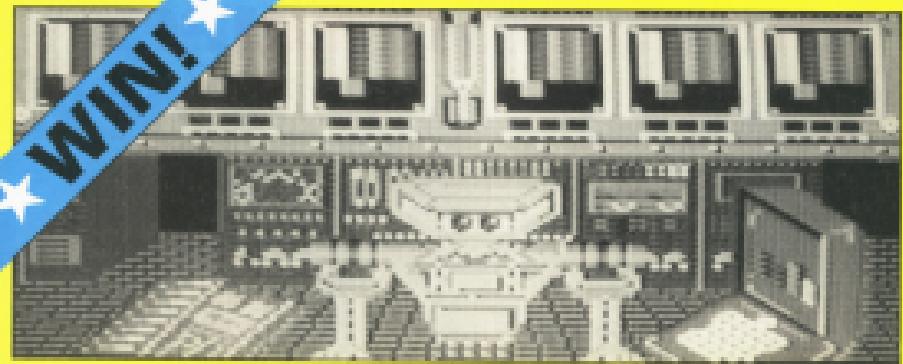
"dialog..."

DEDON GREEN CAMPION WAY, DEN ESSER CB11 3UX. Phone 0371 831000



©1989 Software
Now available.
Phone
for
Details

WIN!



KORONIS RIFT

Twenty copies of Activision's third Lucasfilm game for the 64 are up for grabs!

THIS IS your chance to win a copy of the third game of game to come from the Lucasfilm Corporation. *Koronis Rift*, following to *Rescue on Fractalus* and *Balookey*, is a sophisticated animated arcade adventure in which you play the part of an interstellar archaeologist. Can you find the hidden remains of the legendary planet Etron?



Activision's game uses the same fractal graphics seen in the popular *Rescue on Fractalus*, but this time they're even faster and more sophisticated. You pilot a land-based tank-like vehicle across the surface of the planet, in search of the treasure-packed bulk left by the Ancients. Filled with the results of generations of weapon tests, the bulk are the keys to your fortune.

Which weapons and shields

and accumulate enough lifecredits to enter *Koronis Rift* normally costs £5.99 on cassette, or £14.99 on disk, but we have twenty copies to give away in our great reader-contest.

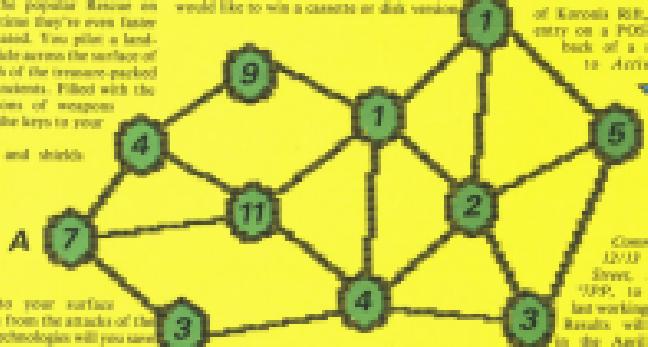
All you have to do is look at the diagram of the planet's surface we have drawn for you. You start at point A, and you must reach point Z. Along the way you must visit the spaceships and collect credits. You must accumulate as many credits as possible, BUT YOU CANNOT TRAVEL THE SAME PATH TWICE.

Work out how many credits you will have at the end of your journey, by collecting as many as possible without travelling the same path twice. Write the number on a postcard, along with your name and address, and complete this re-breaker sentence in an up-front, original and amusing way in fifteen words or less: "I want to explore space with Activision because..." Tell us whether you would like to win a cassette or disk version

LUCASFILM GAMES
KORONIS RIFT



of *Koronis Rift*, and send your entry on a POSTCARD, or the back of a sealed envelope, to Activision Contest,

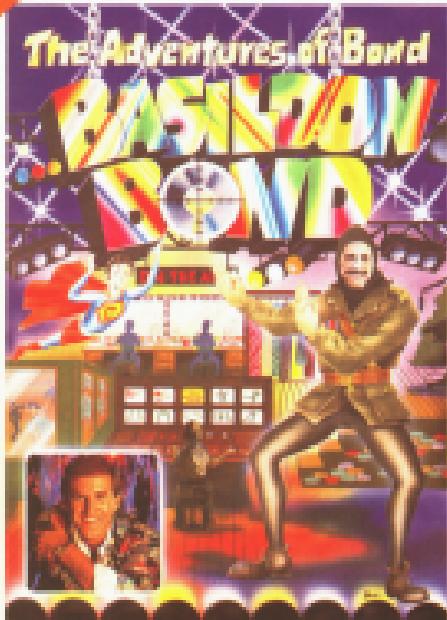


will you pack into your surface rover to protect you from the attacks of the Guardians? Which technologies will you need in order to reach the fabled Twintech level,

Commodore Horatio,
124F Limehouse
Street, London E12 5TY
U.K. (to arrive by the
last working day of February).
Results will be announced
in the April issue, and all
normal competition rules apply.

NEW RELEASES

Bond... Basildon Bond



The Devil's Crown

The most amazing arcade adventure to be released for the Amstrad is NOW available for the Spectrum.

Amstrad Action Review — A.A. Rate
Graphics 94% Sound 75% Grab Factor 85%
Stayng Power 89% A.A. Rating 87%

Amstrad £9.99 Cassette, £13.99 Disk
Spectrum 48K £8.99



Software also from Amstrad version

"THE ADVENTURES OF BOND...
BASILDON BOND"

Starring
RUSS ABBOT
Featuring

COOPERMAN, BLINDERWOMAN, BOND

Under strict and confidential orders from P, who has been renamed B, to confuse the KGB, Bond has been assigned to rescue Russ who is being held captive by a rival comedy act, in the dungeons of the television studio.

Traps, puzzles, jokes, fight sequences and famous characters are combined to produce a funny and slightly hilarious arcade adventure.

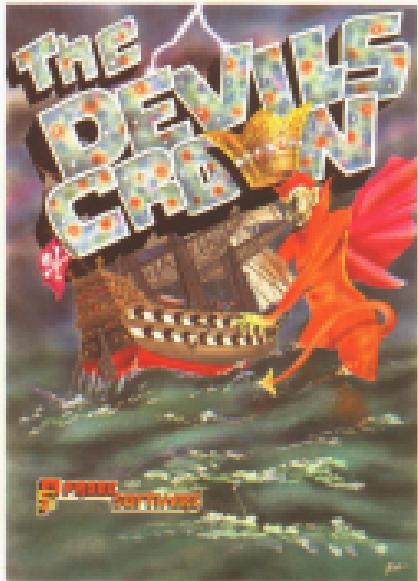
Featuring Russ Abbott's New Single
"LET'S GO TO THE DISCO"

NEW

£9.99 cassette
£13.99 disk

Available for the Commodore 64

Soon available for the Spectrum & Amstrad



**PROBE
SOFTWARE**

185 MITCHAM ROAD, LONDON SW17. Tel: 01-672 9179

Selected titles available from

W.H. Smith



Lakay and all good software retailers

**ZX SPECTRUM £7.99
COMMODORE 64 £7.99
AMSTRAD 46-99**

PING PONG



The officially endorsed version
of the No.1 arcade game by
Konami.

Imagine
...the name
of the game

Imagine Software (1984), 6 Central Street,
Manchester M2 5NS. Tel: 061-484 3939. Telex: 669977

You can almost feel the tension of the big match breaking through the screen ... the spectators crowd is almost on top of you! You return the service with a *Top-spin Backhand*, then a *Forehand Backhand*, the ball bounces high from your opponent's looping, defensive lob ... *SHAZAM!* ... a great shot opens the score ... but this is only your first point! Play head to head or against the computer in this Konami's first and best table tennis simulation.